JVC Service Manual

3-CCD COLOR VIDEO CAMERA
3-CCD-FARBVIDEO KAMERA
CAMERA VIDEO COULEUR A TROIS CCD



VICTOR COMPANY OF JAPAN, LIMITED

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

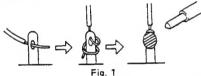
- Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.
- Parts identified by the symbol and shaded () parts are critical for safety.

Replace only with specified part numbers.

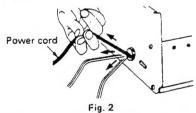
Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

- Fuse replacement caution notice.
 Caution for continued protection against fire hazard.
 Replace only with same type and rated fuse(s) as specified.
- 4. Use specified internal wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
- Use specified insulating materials for hazardous live parts. Note especially:
 - 1) Insulation Tape
- 3) Spacers
- 5) Barrio

- 2) PVC tubing
- 4) Insulation sheets for transistors
- When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.



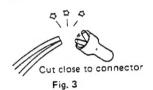
- Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)
- Check that replaced wires do not contact sharp edged or pointed parts.
- When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.



- 10. Also check areas surrounding repaired locations.
- 11. Products using cathode ray tubes (CRTs)
 In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

- 12. Crimp type wire connector
 - In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.
 - 1) Connector part number: E03830-001
 - Required tool: Connector crimping tool of the proper type which will not damage insulated parts.
 - 3) Replacement procedure
 - (1) Remove the old connector by cutting the wires at a point close to the connector.

Important: Do not reuse a connector (discard it).



(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.



(3) Align the lengths of the wires to be connected. In sert the wires fully into the connector.

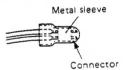


Fig. 5

(4) As shown in Fig. 6, use the crimping tool toor imp the metal sleeve at the center position. Be sure to trimp fully to the complete closure of the tool.

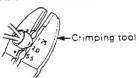


Fig. 6

(5) Check the four points noted in Fig. 7.

Not easily pulled free Crimped at approximate of metals leeve

Wire insulation recessed more than 4 mm

Fig. 7

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

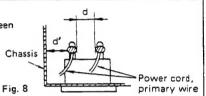
Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

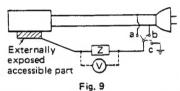


4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method: (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts, accessible part Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.



5. Grounding (Class I model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

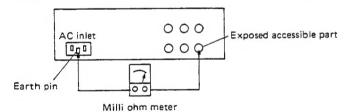


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≤ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V		R≥ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V	Japan	R ≥ 1 M122/500 V DC	AC 1.5 kV 1 minute	d, d' ≧ 4 mm
1 10 to 130 V	USA & Canada	_	AC 900 V 1 minute	d, d' ≧ 3.2 mm
1 10 to 130 V 200 to 240 V	Europe & Australia	R≧10 MΩ /500 V DC	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	0—VV—0 1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
1 10 to 130 V	USA & Canada	0 15 4F	i ≦ 0.5 mA rms	Exposed accessible parts
1 10 to 130 V		0	$i \le 0.7 \text{ mA peak}$ $i \le 2 \text{ mA dc}$	Antenna earth terminals
220 to 240 V	Europe & Australia	0—^^^	$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Other terminals

Table 2 Leakage current specifications for each region

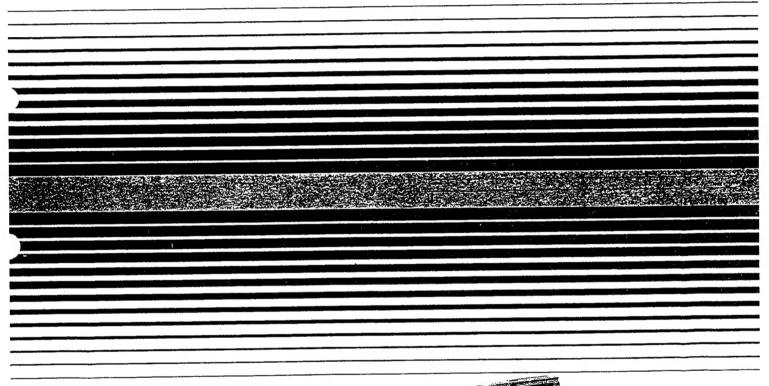
Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

JVC Instructions

3-CCD COLOR VIDEO CAMERA

KY-25 SERIES

(NTSC/PAL)



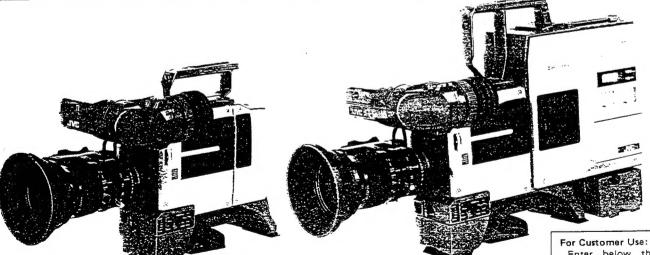


Photo shows the KY-25 video camera.

Photo shows the KY-R25 video camera with an optional recorder (BR-S410), and lens (HZ-516B).

Enter below the lerial No. which is located or the top frame. Retain this information for future reference.

Model No. KY-25/-H2, KY-R25

Serial No.



CAUTION ISK OF ELECTRIC SHOCK

<u></u>

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK.

DO NOT REMOVE COVER (OR BACK).

NO USERSERVICEABLE PARTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated 'dangerous voltage' within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Due to design modifications, data given in this instruction book are subject to possible change without prior notice.

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

AVERTISSEMENT:

POUR EVITER LES RISQUES D'INCENDIE OU D'ELECTROCUTION, NE PAS EXPOSER L'APPAREIL A L'HUMIDITE OU A LA PLUIE.

POWER SYSTEM

This color video camera should be used with 12 V DC only.

CAUTION:

To prevent electric shocks and fire hazards, do NOT use other than specified power source.

Système d'alimentation

Cette caméra vidéo couleur ne doit être utilisée que sur tension continue de 12 V.

Attention

Pour éviter tout risque d'incendie ou d'électrocution, n'utilisez aucune autre source d'alimentation.

Information for Canada

This product complies with D.O.C limits (C.R.C., C.1374) partaining to class B digital apparatus.

Renseignement pour Canada

Ce produit est conforme aux normes du M.D.C. (C.R.C., ch.1374) s'appliquant aux appareils numériques de classe B.

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NOTES

(1) KY-25/-H25

- The carrying handle KA-232 provided as an accessory is used when combined with the camcorder VTR BR-S410
 - For installation, refer to page 20 of the KY-R25 Instruction.
- At this time, the camera adapter KA-20 needs to be removed. Refer to page 34.

(2) KY-R25

 If you wish to connect the VTR using the VTR cable, the camera adapter KA-20 and carrying handle KA-231 are necessary.

For installation, refer to page 34.

For handling, refer to the relevant descriptions in the KY-25/-H25 Instruction.

IMPORTANT SAFEGUARDS

- 1. Read all of these instructions.
- 2. Save these instructions for later use.
- 3. Unplug this appliance system from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- 4. Do not use attachments not recommended by the appliance manufacturer as they may cause hazards.
- 5. Do not use this appliance near water for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, etc.
- 6. Do not place this appliance on an unstable cart, stand, or table. The appliance may fall, PORTABLE CART WARNING causing serious injury to a child or adult, and serious damage to the appliance. Use only with a cart or stand recommended by the manufacturer, or sold with the appliance. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.

(symbol provided by RETAC)



An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

- 7. Slots and openings in the cabinet and the back or bottom are provided for ventilation, and to insure reliable operation of the appliance and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the appliance on a bed, sofa, rug, or other similar surface. This appliance should never be placed near or over a radiator or heat register. This appliance should not be placed in a built-in installation such as a bookcase unless proper ventilation is provided.
- 8. This appliance should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company. For appliance designed to operate from battery power, refer to the operating instructions.
- 9. This appliance system is equipped with a 3-wire grounding type plug (a plug having a third (grounding) pin). This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding plug.
- 10. Do not allow anything to rest on the power cord. Do not locate this appliance where the cord will be abused by persons walking on it.
- 11. Follow all warnings and instructions marked on the appliance.
- 12. Do not overload wall outlets and extension cords as this can result in fire or electric shock.
- 13. Never push objects of any kind into this appliance through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the
- 14. Do not attempt to service this appliance yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
- 15. Unplug this appliance from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the power cord or plug is damaged or frayed.
 - b. If liquid has been spilled into the appliance.
 - c. If the appliance has been exposed to rain or water.
 - d. If the appliance does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the appliance to normal operation.
 - e. If the appliance has been dropped or the cabinet has been damaged.
 - f. When the appliance exhibits a distinct change in performance this indicates a need for service.
- 16. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
- 17. Upon completion of any service or repairs to this appliance, ask the service technician to perform routine safety checks to determine that the appliance is in safe operating condition.





KY-25/-H25 Instruction

Thank you for purchasing the JVC KY-25/-H25 Color Video Camera. This video camera is a compact, sturdy unit designed especially for portability making it suitable for a wide range of applications in the field and in the studio. Productions can be shot in a variety of situations by using this camera in combination with a portable VTR.

To gain maximum benefit from the camera, it is suggested that you study this booklet carefully. After reading, retain it for future reference.

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FEATURES

- Excellent picture reproduction with 3 interline transfer CCD chips.
 - Compact design, lighter weight and less power consumption than conventional tube cameras.
 - Low lag and a high resistance to image burn-in with no deflection distortion.
 - High sensitivity and S/N attribute to the excellent performance in low light situations.
 - Excellent resistance to vibration and impact.
 - Virtually no misregistration from terrestrial magnetism.
 - 530 lines of horizontal resolution is attributed to a high-precision F1.4 prism, coupled with 360,000 (U-Version)/430,000 (E-Version) pixel CCD's for each of the Red, Green and Blue channels. Due to the use of half pitch spatial offset, a Y-channel typical horizontal resolution of 700 can be obtained.
 - RGB use is possible with the optional RM-P200 remote control unit for computer graphics and other RGB applications.

Component, Composite and Y/C Outputs

With these three outputs the KY-25/-H25 can meet a variety of VTR configurations with different VTR cables; Y, R-Y, B-Y for MII, Y/C for S-VHS or Composite for standard use.

Built-in Electronic Shutter

By employing the use of a variable electronic shutter, blurred images are a thing of the past. Shutter speeds of 1/250th, 1/500th and 1/1000th are now possible, in addition to the 1/60th (U-Version)/1/50th (E-Version) standard. This allows for clear visibility, of fast moving objects, during slow-motion analysis.

Character display of operation

On the screen of the viewfinder, VF-P10, camera operating conditions are indicated by logical character displays.

Microcomputer-controlled automatic set-ups

Auto White, Black and Iris functions are controlled by a microcomputer for exact balancing and level adjustments. This one-touch process results in quality pictures with optimum levels under any conditions.

Comprehensive functions

- Standard 2H contour correction is provided.
- 3 Settings for white balancing.
 Two memory positions are available and a 3200K preset
 for emergencies, whether you are indoors or out. (Depends on filter wheel settings)
- Negative and positive signal output is possible for film transfer applications.
- · Color-Matrixing for exact camera matching.

Meeting studio camera requirements

Using the optional remote control unit RM-P200, extension up to a maximum of 100 m (325 ft) is possible. From the RM-P200, the composite and RGB signals (Y/C signals or Y/R-Y/B-Y (for MII) signals can be selected using an internal select switch) can be obtained.

PRECAUTIONS

Safety Precautions

- Use only the optional DC-C11/NB-G1 (with BH-P20) Battery Pack or the optional AA-P200/AA-P250 AC Power Adapter. (*AA-P200: U-Version only)
- Do not modify the unit or operate it without cover panel to prevent danger.
- When there is any abnormality (abnormal noise, smell, smoke, etc.) with the unit, immediately turn the power off and contact your nearest JVC-authorized service agent.
- Do not damage or fray the power cord. Otherwise, this will cause leakage or electrical shock.
- If the camera is not going to be used for an extended period of time, leave the power cord disconnected for reasons of
- If there is a danger of being struck by lightning during outdoor shooting, evacuate to a safe place immediately.

Handling Precautions

Supply voltage

Make sure that the power is between 10.5 V and 15 V DC. If the power voltage is too low, abnormal color and increased noise could occur. Do not exceed 15 V DC in any case, or the unit could be damaged.

Connecting to a portable VTR

Different VTRs require different start/stop triggering modes and connection cables. Before connection, carefully read "Connection to Video Recorder" on page 10.

Ambient temperature

Do not operate the camera outside a -5°C to +45°C (23°F to 113°F) temperature range. Refer to the corresponding item in the "Specifications" on page 18.

- Where there are strong electromagnetic waves or magnetism, for example near a radio or TV transmitter, transformer, motor, etc., the picture may contain noise and the colors may be incorrect.
- When a wireless microphone or wireless microphone tuner is used near the camera, the tuner could pick up noise. In such a case, select another channel.

STANDARD CONFIGURATION

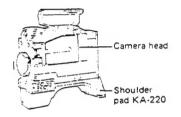
The KY-25 is designed as a field work camera such as for ENG/EFP and the KY-H25 is prepared as an input camera for image processing, etc.

The camera head of the KY-25 and KY-H25 is the same; the only differences are listed below. For this reason, camera operation itself is the same for the two cameras.

Other differences are as given in the table below.

Mode	el name KY-25	KY-H25
Configuration		
Camera head	. 0	0
Shoulder pad (KA-220)	С	, ×
Viewfinder (VF-P10)	0	×
Tripod base (KA-500X)	0	. ×
Carrying case (CB-P410)	C	×
Carrying handle (KA-232)	: 0	· ×
Chest rest (KA-111)	. 0	×

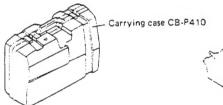
O: Provided X: Not provided











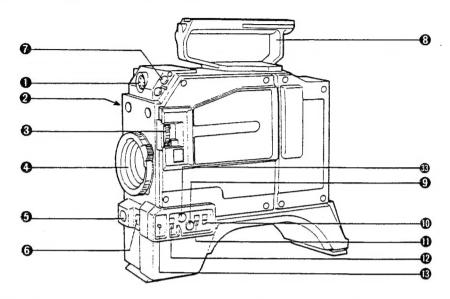
Viewfinder V F-P10



Tripod base KA-500X

CONTROLS, CONNECTORS AND INDICATORS

Camera Head



Viewfinder connector (VF)

Connector for a exclusive viewfinder (VF-P10).

2 Lens connector (LENS)

Connect the cable from the standard lens.

6 Filter turret

The turret for the Neutral Density and color temperature conversion filters is provided with four positions.

- 1) CLOSE: Same condition as lens being capped.
- 3200K: For shooting indoors or outdoors with insufficient light.
- 3) 5600K: For shooting outdoors.
- 5600K ND: The 12.5 % ND filter and 5600K color filter are combined for shooting outdoors in direct sunlight or on a bright day.

Lens mount ring

Auto setup button (AUTO SETUP)

Press this button to adjust the setup (black/white balance) or the white balance automatically and save the state in memory. When the button is pressed once, the white balance is adjusted; when depressed continuously for longer than one second, the setup is adjusted.

Before pressing this button, set white balance mode switch \oplus to the AUTO 1 or AUTO 2 (whichever you want to save) position.

O Video recorder start switch (VTR)

For start/stop triggering of the VTR.

Shutter speed select button and indicator lamp (SHUTTER) This button permits speed selection of the electronic shut-

ter. This is effective when shooting fast-moving subjects.

SHUTTER

Every time this button is pressed, the shutter speed will change to 1/250, 1/500 and 1/1000 in this order (cyclic operation). At this time, the indicator lamp comes on.

- NORMAL

If this button is pressed, the shutter speed will become *1/60. (*E-Version: 1/50) Normally use in this state. The indicator lamp goes out.

② Carrying handle (KA-231)

(DISP SELECT)

This camera has a function to display the setting conditions of various control switches and settings in the viewfinder screen. There are two display screens; every time this button is pressed, the display will change from "no indication" to "screen 1" to "screen 2" sequentially.

White balance mode switch (W. BAL)

This switch permits mode selection of white balance.

AUTO 1: Set to either position when activating the auto and setup or auto white balance function. This camera AUTO 2 has two auto white memory circuits and this switch serves as its select switch.

PRESET: For using in the preset (3200K) state or 5600K with change of filter wheel.

① Camera/color bar select switch (MODE)

CAM: Outputs the video signal from the camera to the video output.

BARS: Outputs the color bar signal to the video output. NEGA: Outputs the negative video signal from the damera to the video output.

@ Sensitivity select switch (HI-SENS)

For use in low light conditions, the camera sensitivity gain can be boosted by +9 dB or +18 dB. Normal operation is "0 dB".

❸ Operation switch (CAMERA/VTR)

3-step select switch. Selects "ON", "OFF" of the pamera power and VTR power-save mode $\hat{}$.

This may not be possible with some VTRs.

(MODE)

Select according to the application of camera cable connector ${\bf Q}$.

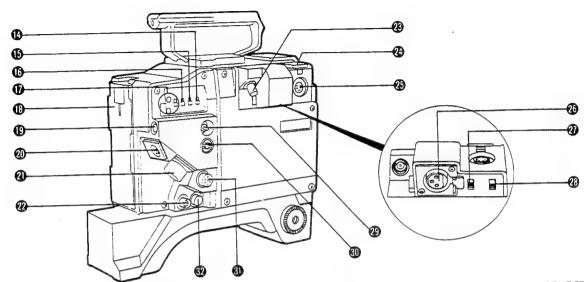
VTR: Set to this position when connecting to a portable VTR with a composite signal input or component signal input (Y, R-Y, B-Y).

Y/C 358: Set to this position when connecting to a VTR (Y/C 443) with separate Y/C signal inputs (S-VHS recorder).

RM: Set to this position when connecting a remote control unit (RM-P200)

® VTR triggering mode select switch (VTR)

Set according to the start/stop triggering mode of the VTR connected



Switch position	VTR connector	VTR trigger
L	10-pin	Ground start
Н	10-pin	4 V start
В	14-pin	4 V start

(AUDIO LEVEL)

Selects the microphone (audio) output level through camera cable connector ${\bf 2}{\bf 0}$.

- H: Outputs at an approximate level of -20 dB.
- L: Outputs at microphone own level.

Phase adjustment control (PHASE)

Adjusts the phase of the video signal output from the camera with respect to the external reference signal when genlocking to other video sources.

H: For adjustment of H phase.

SC: Coarse; For coarse adjustment of SC phase in three steps, 0°-120°-240°.

Fine: For fine, continuous adjustment of SC phase.

(Battery Guide

Guide for battery pack (DC-C11 optional). This is also used as a holder when the AC power adapter *AA-P200 (optional) or battery holder BH-P20 (optional, for the exclusive battery NB-G1) is used. (*AA-P20: U-Version only)

(EARPHONE)

When the video recorder used has a return audio signal line, this jack makes it possible to monitor the audio signal during recording or playback.

@DC 12 V IN connector (DC INPUT)

Use this 4-pin Cannon XLR connector for supplying 12 V DC from the optional AA-P250 or *AA-P200 AC power adapter. (*U-Version only)

Pin No.	Function
1 .	GND
2	
3	
4	-12 V

② Camera cable connector (VTR/RM)

Connector for connecting the cable from the recorder, etc. selected by switch ${\bf @}\,$.

@ GENLOCK signal input connector (GENLOCK IN)

Input connector for a composite video or black burst external reference signal. This allows synchronization with other video devices.

⊕ Test output connector (TEST OUTPUT)

The signal selected by the internal "PIX SELECT" switch is output here. Either composite video signal (VBS), or B, G, R signals can be selected as an output. This is factory-preset to the composite video signal (VBS) output.

Exclusive microphone mounting shoe

Shoe for mounting the exclusive microphone M-K50 (monaural type) or MV-P602 (stereo type).

- Exclusive microphone input socket (MIC INPUT)
- Input socket for the exclusive microphone.
- Mic input socket (MIC INPUT) Input socket for the microphone with a 3-pin XLR connector. The input is parallel with MIC connector
- Mic output select switch (MIC MODE) This switch must be set to "MONO" position.

@ VF AUX video select switch (RET)

When the VTR is set to the playback mode with the 14-pin type VTR connected to camera cable connector (2), if this switch is set to ON, the playback picture can be monitored in the viewfinder. This serves the same function as the RET switch on the lens.

@ Power select switch (POWER)

Permits power on/off and selection of power supplies.

RM/VTR: Set to this position when power is fed from the remote control unit (RM-P200) or porta-

ble VTR through the camera cable.

OFF: The power to the camera will becompletely set to OFF.

DC INPUT: Set to this position when the AC lower adap-BATTERY ter (FAA-P200) or AA-P250)/4-pin×LR or the battery pack (DC-C11 or N8-G) is used. (*AA-P200: U-Version only)

1 Intercom level (INTERCOM LEVEL)

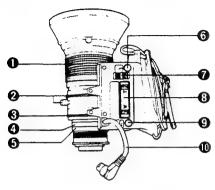
Can control the volume level of the cameras intercom headphone.

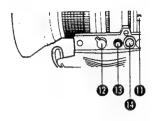
- @ Intercom jack (INTERCOM)

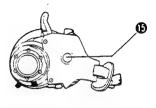
® Zebra button (ZEBRA)

Switches the zebra pattern video level indig for on the viewfinder ON/OFF.

Zoom Lens (HZ-516B, optional)







Focus ring

Focus adjustment ring.

2 Zoom lever/zoom ring

Ring and lever for manual zooming.

(1) Iris ring

When the iris mode switch (a) is set to "M" (manual), the iris can be opened and closed manually using this ring. When it is set to "A", the iris is adjusted automatically.

Back focus ring

For the back focus adjustment, turn this ring.

6 Macro ring

If the ring is turned fully in the direction of the arrow, macro shooting at a distance of about 9 cm from the subject will be possible.

6 Momentary iris switch

Even during the manual iris operation with the iris mode switch set to "M" (manual), iris control can be automatic as long as this button is kept depressed.

1 Iris mode switch

A: For auto iris operation and remote operation (with RM-P200)

M: For manual iris operation.

R: This position cannot be used.

② Zoom servo lever

The speed and direction of the servo zooming is controlled by this see-saw switch.

@ Return switch (RET)

The return video signal from the VTR can be monitored in the viewfinder while this switch is depressed.

Lens cable

Connect the lens connector on the camera head.

Securing knob

For fixing back focus ring 4.

2 Zoom mode knob (ZOOM)

S: For power zooming.

M: For manual zooming.

Focus servo connector

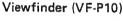
For connecting the optional focus servo unit.

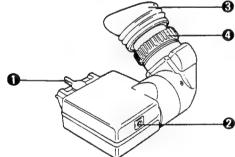
® Zoom servo connector

For connecting the optional zoom servo unit.

O VTR switch (VTR)

For the start/stop operation of the VTR.





O Slide lock lever

After the viewfinder has been attached to the camera, the viewfinder can be slid to the left and right (by 40 mm) if this lever is loosened.

Tally lamp

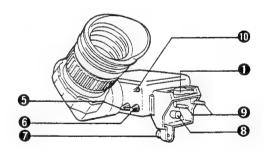
When the camera is used connected to a portable VTR, this LED comes on to indicate the recording mode. To switch it off, set switch 0 to OFF.

Eyepiece

Focusing adjustment is possible.

Seprence fixing ring

Loosen and adjust the eyepiece back and forth to match you vision.



- 6 Contrast control (CONT)
- 6 Brightness control (BRIGHT)
- Lock screw

Use to lock the viewfinder onto the camera.

Ø VF connector

Directly connected to the video camera.

Viewfinder fixing pins

Insertion pins for use in attaching to the video camera.

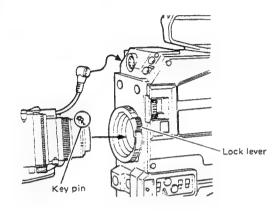
Tally switch (TALLY)

Turns the top tally lamp ② off even when the camera (VTR) is recording. The REC indicator inside the view-finder will be kept ON.

INSTALLATION

Lens Installation (Optional HZ-516B)

- Be careful of the key pin of the lens and slot of the mount ring groove, then insert the lens flange into the mount groove firmly.
- 2 Turn the lock lever clockwise to fix the lens.
- 3 Connect the lens cable to the camera head.

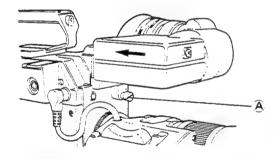


Note:

Make sure that the lens is firmly attached. Otherwise, the back focus adjustment may be incorrect.

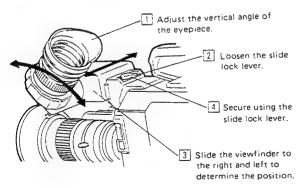
Viewfinder Installation (VF-P10)

- Mate the viewfinder fixing pin with the mounting hole of the camera head, then insert.
- Insert it all the way, then confirm that the viewfinder has been positively connected and turn viewfinder fixing screw (A) clockwise to lock it.

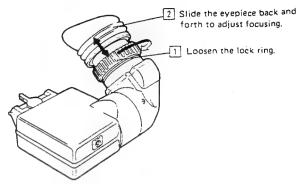


Eyepiece adjustment

Vertical angle and left/right slide adjustment



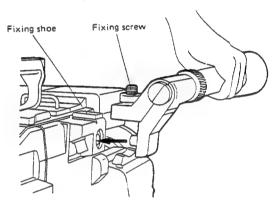
Focusing adjustment



Microphone Installation

Exclusive microphone (M-K50 or MV-P602, optional)

- Insert the microphone into the mic holder fixing shoe on the right top of the camera.
- 2 Secure the microphone using the fixing screw.



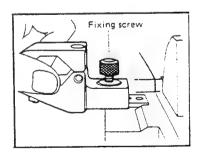
Note:

 Lens motor noise or mechanical friction noise may be picked up by the microphone and recorded. Check possible noise conditions in advance.

Ordinary microphone

Install the microphone onto the camera head using the optional mic holder (Part No. SCUA30312, service parts).

Insert the mic holder into the mic holder fixing shoe on the right top of the camera, then fix it using the fixing screw.



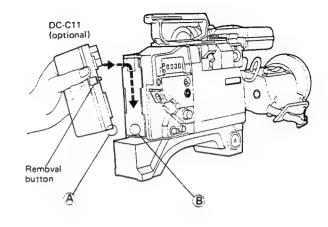
2 Connect the microphone output to the MIC to nnector on the camera head.

Battery Pack (DC-C11, optional) Installation

- Press battery pack guide (A) onto (B) on the battery guide, then press it firmly to the camera using (B) as the reference. Match the battery pack guide with the battery guide, then press it down until it is locked.
- To remove the battery pack, slide the removal button towards you, then move the battery pack upward.

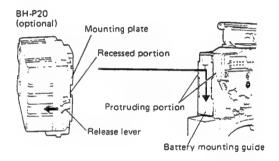
Battery pack

- With a fully-charged DC-C11 battery pack, the camera will operate for approx. 70 minutes at normal temperatures (about 25°C (77°F)).
- Be sure to charge the battery pack before recording. It is also recommended to have some spare charged battery packs ready.
- Replace the battery pack when the BATT indicator in the viewfinder starts flickering.
- Use the optional AA-P250 AC power adapter to charge the battery pack. For the charging procedure, refer to the AA-P250's instruction manual.



Battery Holder (BH-P20, optional) Installation

- Aligning the recessed portion of the mounting plate of the BH-P20 with the protruding portion of the battery mounting guide on the back of the camera. Push the BH-P20 down until it locks.
- 2 To remove the BH-P20, push the release lever, slide the BH-P20 up.

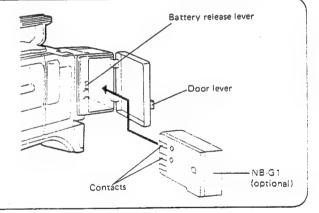


Inserting the NB-G1 battery pack (optional)

- Open the compartment door by pushing the door lever away from the BH-P20.
- Insert the NB-G1 battery pack with its contacts facing the camera, as illustrated.

When properly inserted, the battery pack will automatically be locked by the battery release lever.

 To remove the battery pack, push the battery release lever away from the BH-P20; the battery pack will be unlocked so it can be removed.



AC Power Adapter AA-P200 (optional) Installation

AA-P200: U-Version only

This describes mounting method when the AC power adapter AA-P200 is used which can be directly mounted onto the KY-25/KY-H25.

- As shown, insert the power adapter into the battery quide on the back of the camera head from above, then press it down.
- Connect the AA-P200 DC output cable to the DC IN connector on the camera head.
- To remove the power adapter, pull it upward while pressing the release button.

Tripod Installation

In the case of the KY-25 (using the KA-500X tripod base)

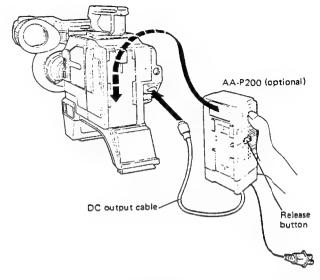
- Use either the 1/4" or 3/8" holes to match the tripod used, select the front, middle or rear holes of the camera for maximum balance, and taking its center of gravity into consideration.
- While pressing the lock button, set lock lever A to its released position (turn it clockwise).
- After engaging the notch on the rear of the camera with that of the tripod base, place the camera on the tripod base.
- 4 While pressing the lock button, set lock lever (A) to its locked position by turning it to secure the camera.

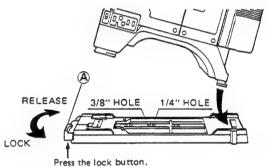
Caution:

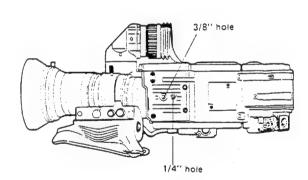
When rotating the lock lever, turn it while holding the camera's handle with one hand. Turn the lever slowly to prevent the camera from dropping off the tripod.

In the case of the KY-H25

As shown on the right, the 1/4" and 3/8" holes are provided on the bottom of the KY-H25. Use these in accordance with the tripod used.







POWER SOURCES

There are four methods of powering the KY-25 and KY-H25 as described below.

- (1) Power from the battery pack (DC-C11 or NB-G1) or AC power adapter (*AA-P200). (*U-Version only)
- (2) Power from the AC power adapter (AA-P250).
- (3) Power from a portable VTR.
- (4) Power from the remote control unit (RM-P200).

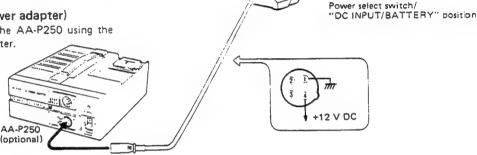
Power from the DC-C11/NB-G1 (battery pack) or AA-P200 (AC adapter) (AA-P200: U-Version only)

- Install the DC-C11, NB-G1 or AA-P200 to be used to the KY-25/KY-H25. (Refer to the installation method on pages 7 and 8.)
- 2 If the power select switch on the camera head is set to the "DC INPUT/BATTERY" position, power is fed to the



1 Connect the KY-25/KY-H25 to the AA-P250 using the power cable supplied with the adapter.

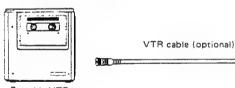
If the power select switch on the camera head is set to the "DC INPUT / BATTERY ' position, power is fed to the camera head.



In case of the DC-C11 (optional)

Power from a portable VTR

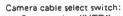
- Connect the camera to the VTR using a VTR cable which matches the VTR used. (Refer to page 10.)
- When a VTR with a composite or component (Y, B-Y, R-Y) input is used, set the camera cable select switch on the camera head to the "VTR" position. When an S-VHS VTR is connected, set the switch to the "Y/C 358 (Y/C 443) position.
- When the power select switch on the camera is set to the "RM/VTR" position, power is fed to the camera head.



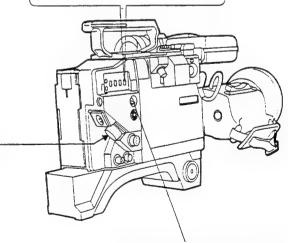
Portable VTR

Caution:

If the camera is operated from the battery in the portable VTR, the battery operation time could be very short due to the small capacity of the battery. The power supply to the camera should not exceed the rated current capacity of the VTR.



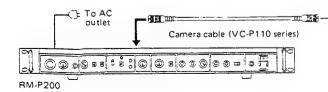
- Set to the "VTR" or "Y/C 358 (443)" position for the correct VTR being used.
- Set to the "RM" position when power is fed from the RM-P200.



Power select switch "RM/VTR" position

Power from the RM-P200 (remote control unit)

- Using the remote control cable (VC-P110 series), connect the camera head to the RM-P200.
- Set the camera cable select switch to the "RM" position.
- When the power select switch on the camera is set to the "RM/VTR" position, power is fed to the camera head.

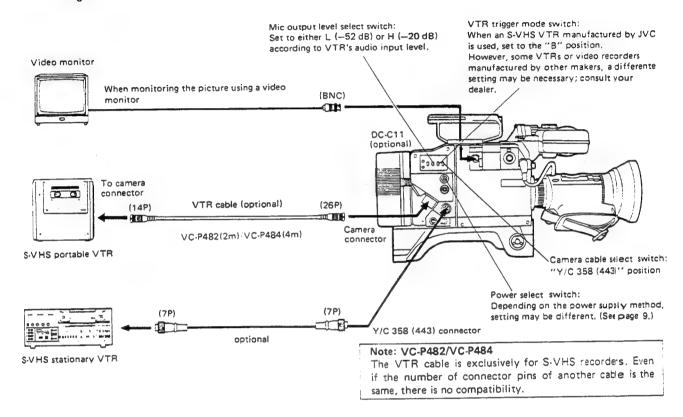


DOI: 14 Feb

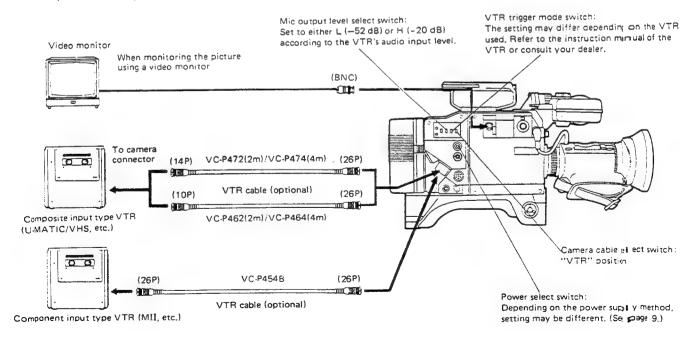
CONNECTION TO VIDEO RECORDER

Before making connections, be sure that the power of the camera and units used is set to OFF.

Connecting to a VTR with the Y/C inputs (S-VHS video recorder)



 Connecting to a VTR with the composite input (U-VCR/ VHS, etc.) or component input (MII, etc.)

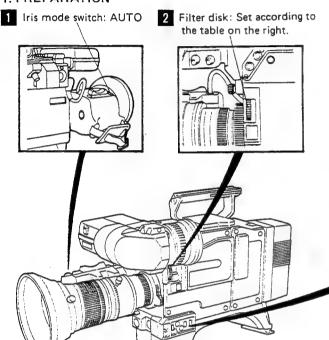


BEFORE SHOOTING

To record a clear picture with correct colors, it is necessary to adjust the back focus and auto setup.

Once the back focus is adjusted at the time of lens installation, subsequent adjustment is basically not necessary. However, with auto setup adjustment, be sure to adjust it in advance every time shooting is done. Prior to adjustment, connect the VTR, TV monitor, etc. in accordance with the prescribed connection methods, then set up camera switches and controls as shown below.

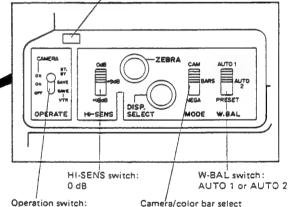
1. PREPARATION



Upon completion of setting, point the camera at an appropriate object, then operate the lens focus lever and zoom lever and monitor the picture in the viewfinder screen or monitor

Filter Color Shooting conditions indication temperature CLOSE When the camera is not used Sunrise or sunset, studio 3200K 2 lighting Outdoors; cloudy or rainy 5600K 3 weather Outdoors; bright or direct sun 4 5600K + 12.5% ND

3 Set the switches as shown below. If the LED does not glow in red, no power is fed to the camera. Supply power by referring to page 9.



ON/ST-RY (or ON/SAVE)

Camera/color bar select switch: CAM

2. BACK FOCUS ADJUSTMENT

Perform this adjustment while observing the TV monitor or viewfinder.

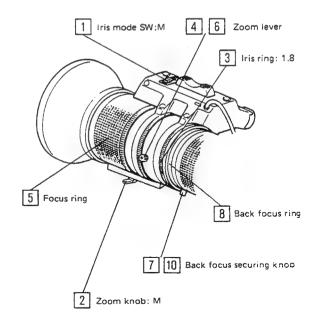
- 1 Set the iris mode switch on the lens to the "M" position.
- 2 Set the zoom knob on the lens to the "M" position.
- 3 Set the iris ring to "f1.8" (open).

At this time, if the lighting is too strong, reduce lighting or move to a dark place.

- 4 Fully turn the zoom lever to the TELE position.
- [5] Bring into focus using the focus ring.
- 6 Fully turn the zoom lever to the WIDE-angle position.
- 7 Loosen the back focus securing knob.
- 8 Turn the back focus adjustment lever, then adjust it to a position where the focusing is best.
- Perform fine tuning by repeating steps 4 to 8 a few times.
- 10 Finally, tighten the back focus securing knob.

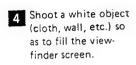
TV screen.

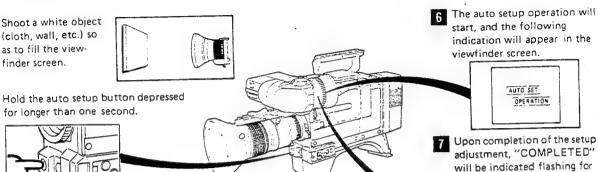
The back focus adjustment is more accurate when the distance between the subject (pattern) and camera is more than 3 m (10 ft.).



3. AUTO SETUP ADJUSTMENT (BLACK/WHITE BALANCE ADJUSTMENT)

- Start adjustment following steps 1 to 3 (Refer to "1. PREPARATION") described previously.
- Auto setup will be performed in the order of black, white and black for adjustment of balance.





Note:

If the duration in which the auto setup button is being pressed is shorter than one second, only the white balance will be adjusted. Be sure to keep the button depressed for longer than one second for adjustment of the setup. For auto white balance, refer to page 13.

This completes the setup adjustment. The white balance state is automatically held in the built-in memory circuit.

viewfinder screen. AUTO SET COMPLETED

AUTO SET

about 4 seconds in the

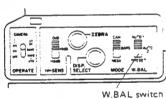
OPERATION

NOTE-

· White balance memory

The KY-25 and KY-H25 have two built-in white balance memory circuits and different color temperature states can be stored in memory, individually.

If the above auto setup adjustment is performed with the W.BAL switch set to "AUTO 1". The white balance state will be held in memory "AUTO 1". Likewise, if it is done with the switch set to "AUTO 2", it will be held in memory "AUTO 2".



· Display in the viewfinder

If the above auto setup adjustment has not been done correctly, the "COMPLETED" indication as described in 7 above will not appear in the viewfinder screen.

Instead, the following error message or more light message will

If the error message appears, check for the following causes and items, then perform auto setup adjustment again.

- The error message and more light message will flicker in the screen for about 4 sec. as will in the "COM-PLETED" indication. After 4 sec. if goes out. Pay attention to the contents of the indication.
- Error message during auto black balance

LENS NOT CLOSE?

The lens does not Cause: perform auto

operation.

Remedy: Check for lens cable connection.

AUTO BLACK LENS NOT CLOSE?

(Display)

 Error message during auto white balance (including the more light message)

(The display shows an example in which the W.BAL switch is set to "AUTO 1".)



Error messages

LOW LIGHT ERROR

Insufficient amount of light. Cause:

Remedy: Increase lighting or increase sensitivity using the HI-SENS switch. (If the sensitivity is incressed, the S/N ratio will deteriorate.)

OBJECT ERROR?

The subject shot is not suitable. Cause:

Remedy: Check if the subject is a white object and change the subject if necessary.

OVER LIGHT ERROR

The incident light is too strong. The colortempera-Cause: ture filter is not suitable.

Remedy: 1. Check to see if strong light such as sunlight or its reflection from the subject is diectly introduced to the video camera.

2. Set the filter to the correct position.

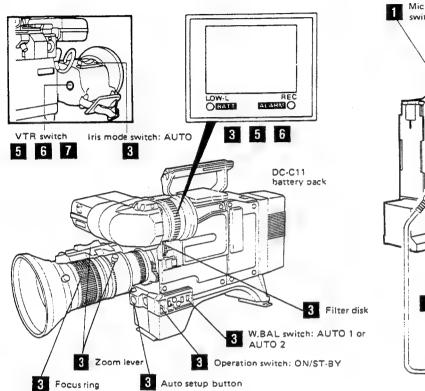
· More light message

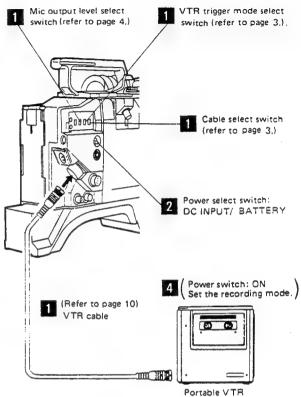
MORE LIGHT

This message is somewhat different from an error ressage. The "MORE LIGHT" indication appears when the anount of light is insufficient, indicating that the white balanceh as been automatically adjusted to a level detrimental to he ooting. Although this situation may not be wrong, it is recommended that the amount of light be increased.

OPERATION

Recording using a portable VTR (When the DC-C11 is used)





Preparation for recording

(The following steps, numbered 1 through 7, correspond to the numbers in the illustrations above, showing controls and switches to be operated in respective steps.)

- Connect the portable VTR following the connection method given on page 10.
- 2 Supply power to the camera following the power supply method given on page 9.

Note:

When the BATT indicator or "BATT EMPTY?" display in the viewfinder flickers, the battery pack is nearly exhausted; replace with a fully-charged battery pack.

- Perform auto setup adjustment following "Before shooting" on page 12.
- Set the VTR to the recording mode. For the operation of the VTR, refer to the instruction manual of the VTR.
- When the tape in the VTR starts moving, press the VTR switch on the lens.

The VTR enters the recording pause mode. This completes the preparation.

Recording

- 6 When the VTR switch on the lens is pressed, recording will commence. At this time, the REC lamp in the viewfinder comes on.
- To stop recording, press the VTR switch again.
 The VTR stops in the recording pause mode. The REC lamp goes out.

Power-save function of the VTR

If a 14-pin VTR (example: CR-4900) with a power save circuit is used, the power of the VTR can be saved during the interval from the recording pause to the restart of recording.

Operate as in the following:

- I Upon completion of the preparation for recording, set the operation switch to the "ON/SAVE" position.

 The Upper Drum of the VTR will be switched off in the recording pause mode.
- 2 To start recording, set the operation switch to the "ON/ SAVE" position.

The Upper Drum of the VTR will be switched on and the VTR enters the recording pause mode.

3 When the VTR switch on the lens is pressed, recording will start.

White balance adjustment

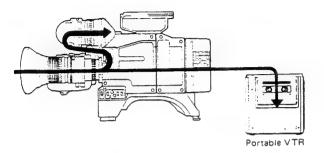
If the camera is moved from indoors to outdoors or vice versa, the type of light source changes. This requires readjustment of white balance.

White balance can be adjusted by following the same procedure as described in "AUTO SETUP ADJUSTMENT" on page 12, but the way the auto setup button is pressed differs. For adjustment of white balance, press the auto setup button once and release it immediately. Be careful not to keep it depressed, otherwise the auto setup adjustment mode will be engaged.

The display in the viewfinder shows AUTO WHITE, instead of AUTO SET. The rest is the same as for auto setup adjustment.

Monitoring the picture

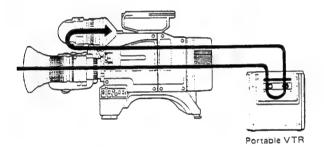
When the camera is connected with a portable VTR using the VTR cable, the picture can be monitored in the viewfinder. Monitoring the picture from the camera



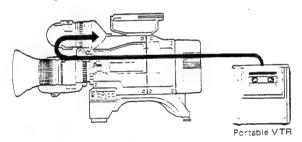
Monitoring the E-E mode picture from the VTR

While the return button (RET) on the lens is held depressed, or when the RET video switch on the portion of the camera where the microphone is mounted is set to the "ON" position, the return video signal can be monitored.

However, unless the VTR used has a return video signal function this is not possible. (This is impossible with a 10-pin type VTR.)



Monitoring the VTR playback picture



 For the playback operation of the VTR, refer to its instruction manual.

Contour (contour compensation) ON/OFF switch

To provide a sharper image, this camera has a built-in 2H contour compensation circuit for both vertical and horizontal signals. This circuit is factory-preset to ON.

The position of the contour switch can be confirmed in the character display. For details, refer to the character display description on page 15.

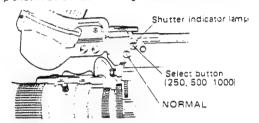
To switch off the contour compensation, remove the side cover on the right of the camera, set the CONTOUR switch on the internal CP board to "OFF". For detailed operation, consult your dealer.

Electronic shutter

This function goes a long way when analyzing the motion of a fast moving object, etc. The position can be changed in 3 steps: 1/250, 1/500 and 1/1000, in addition to normal*1/60 sec.

As the shutter speed is made faster to 1/250, 1/500 and 1/1000, the sensitivity will drop; therefore, shooting in a dark place is not possible. For selection, use the shutter speed select buttons (two) on top of the filter turret to the right side of the camera.

When the power of the camera is switched "ON", *1/60 sec. is set as an initial setting. At this time, the shutter indicator lamp shown below does not light. (*E-Version: 1/50 sec)



Selecting the shutter speed

To change the shutter speed, press the upper button (250, 500, 1000) of the two buttons.

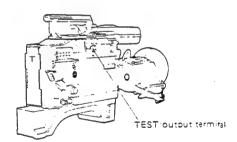
The shutter speed will change from 1/250, to 1/500 to 1/1000 sequentially every time this button is pressed and cycle in a loop. At this time, the shutter indicator lamp will come on. To set to the normal *1/60 sec., press the lower button (NORMAL) of the two to return to the initial state.

The shutter speed setting can be confirmed by observing the viewfinder screen using the character display function of this camera.

For the display indication, refer to the character display indication on page 15. (*E-Version: 1/50 sec)

Selecting the TEST OUT signal

The TEST output terminal on the left of the camera is factory-preset so that the composite video signal (VB\$) is output. However, it is also possible to output any one of R, G, or B signal by internal switch. (* R, G or B signal doss not have a color component. Therefore, even if it is connected to a color monitor, it appears as a monochrome signal on the screen.)



To switch this, remove the side cover on the right of the camera, then change the setting of the "PIX SELE CT" switch on the internal CP board. When the test output signal is changed, the signal to be monitored on the viewfinders creen is also changed accordingly.

For further detailed operation, consult your JNC authorized dealer.

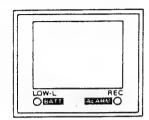
The type of signal to be output to the TEST output terminal can be confirmed in the viewfinder screen using the display function of this camera.

Refer to the character display indication described later.

WARNING INDICATION AND CHARACTER DISPLAY

Warning indication using LEDs

The viewfinder includes the following indicator lamps, giving a warning during shooting.



LOW-L/BATT (red)

LOW-L: Lights when the camera's video output is too low. Even if the lamp is lit, recording can be done but the picture will be dark; however, this indicates that additional lighting is necessary.

BATT: Flashes when the battery in the camera or VTR (depending on the VTR used) is almost exhausted.

• REC (green)

REC: The REC (recording) lamp lights interlocked with the indicator lamp in front of the viewfinder.

ALARM: Flashes when the VTR connected to the camera

has trouble or the tape comes to the end (depending on the VTR used).

ing on the VIR used).

Note:

The above warning functions depend on the VTR connected. Refer to the VTR's instruction manual.

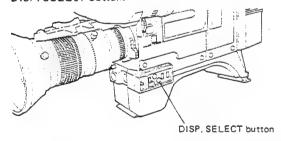
Character display indication

The display indications include the STATUS indication, MODE indication and WARNING indication; the details of each are as follows:

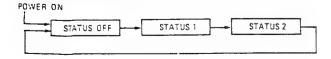
STATUS indication

Various control switches and their settings are indicated by

There are two display screens, which can be selected using the DISP. SELECT button.



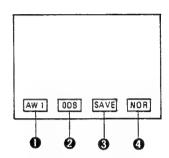
The DISP. SELECT button is a push-button switch, which changes as follows every time it is pressed.



The STATUS OFF indicates no-indication state, to which setting the display is always initialized when the operation switch is switched ON from OFF.

STATUS 1 indication

The following display appears in STATUS 1 mode.



1 Position indication of the W.BAL switch

PRE: Indicates that the W.BAL switch is set to the "PRESET" position. The white balance of the camera is set to the preset (3200K) state and the auto setup function cannot be activated.

AW 1 : Indicates that the W.BAL switch is set to the "AUTO 1" position. The white balance of the camera is set to the balance which is held in the "AUTO 1" memory of the camera.

If the auto setup adjustment is made while this is indicated, the white balance will be automatically adjusted and the balance at this point will be rewritten to the AUTO 1 memory.

AW 2: Indicates that the W.BAL switch is set to the "AUTO 2" position. Just as in the above AUTO 1, the white balance of the camera is set to the balance stored in the "AUTO 2" memory. If the auto setup adjustment is made while this is indicated, the AUTO 2 memory will be rewritten.

MANU: This is indicated if the optional remote control unit RM-P200 is connected and its W.BAL switch is set to the MANUAL position. Note that the auto setup adjustment or auto white balance adjustment cannot be done from the camera.

* For the auto setup adjustment, refer to page 12.

Position indication of the HI-SENS switch

O DBi: Indicates that the HI-SENS switch is set to the "OdB" position.

9 DB: Indicates that the HI-SENS switch is set to the "+9 dB" position.

[18_DB] :Indicates that the HI-SENS switch is set to the "+18 dB" position.

Indication of the VTR mode

SAVE: Indicates that the VTR is in the SAVE mode.

STDBY: Indicates that the VTR is in the ST-BY mode.

REC: Indicates that the VTR is in the REC mode.

Note

"SAVE" indication is only when a 14-pin VTR with a power save facility is used. Nothing is indicated when a VTR other than this is used.

Electronic shutter speed indication

NOR: Indicates that the shutter speed is set to *1/60 sec.

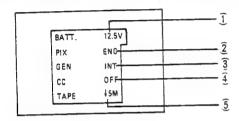
(E-Version: 1/50 sec)

Indicates that the shutter speed is set to 1/250 sec. Indicates that the shutter speed is set to 1/500 sec. 500: 1000: Indicates that the shutter speed is set to 1/1000 sec.

For changing the electronic shutter speed, refer to page 14.

STATUS 2 indication

The following display appears in the STATUS 2 mode.



(1) Battery voltage indication

The battery voltage will be indicated digitally,

2 Signal indication of TEST OUT/VF OUT

The type of video signal appearing at the camera's TEST OUT terminal and viewfinder screen is indicated.

PIX ENC: The encoder output (Composite) signal is output.

The red signal is output. PIX R:

The green signal is output PIX G: The blue signal is output. PIX B :

Note:

 The camera is factory-preset to the "PIX ENC" position. To obtain another signal output, change the setting of the "PIX SELECT" switch inside the camera. (Refer to page 14.)

When the foregoing PIX R, PIX G or PIX B signal is output, the signal does not have a color component. Therefore, even if it is connected to a color monitor, it appears as a monochrome signal on the screen.

3 GENLOCK mode indication

Indicates the genlock mode of the camera.

GEN INT: Operates by the internal SSG (sync signal generator) of the camera (INT mode).

GEN EXT: Indicates that the camera is genlocked to an external signal (EXT mode).

* As for the connection with the external signal source in the EXT mode, refer to page 17.

4 Contour indication

The contour compensation is being made. CC ON:

CC OFF: The contour compensation is not being made.

To switch ON or OFF the contour compensation, use the internal switch. For its operation, refer to page 14.

3 Remaining tape indication

When the amount of remaining tape in the VTR becomes low, the remaining time is indicated. This is indicated only when the VTR used has a tape remaining detection circuit and can output a signal to the camera.

TAPE \$10M: When the tape remaining time becomes less than 10 minutes, this is indicated.

When the tape remaining time becomes less TAPE ↓ 5M: than 5 minutes, this is indicated.

When the remaining tape time is 10 minutes or more, nothing is indicated.

2 MODE indication

The execution mode during the auto setup adjustment and auto white balance adjustment will be indicated.

When the auto setup button is pressed, if the status indication is displayed, it will disappear, and be replaced by the mode indication.

Upon completion of the auto setup operation or auto white balance operation, the results will be indicated for about 4 seconds, then the original status indication will be resumed. For the details of the execution mode indication, refer to

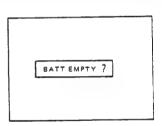
"auto setup adjustment" on page 12.

3 WARNING indication

When the battery is exhausted, the following indication will

This indication will supersede other indications (STATUS and MODE).

When this indication appears, replace the old battery pack with a fully-charged battery pack as soon as possible.



TROUBLESHOOTING

- Auto setup or auto white balance adjustment cannot be completed.
 - Is the filter turret correctly set?
 - Is the subject you are shooting a colored object?
- Auto setup or auto white balance adjustment cannot be performed.

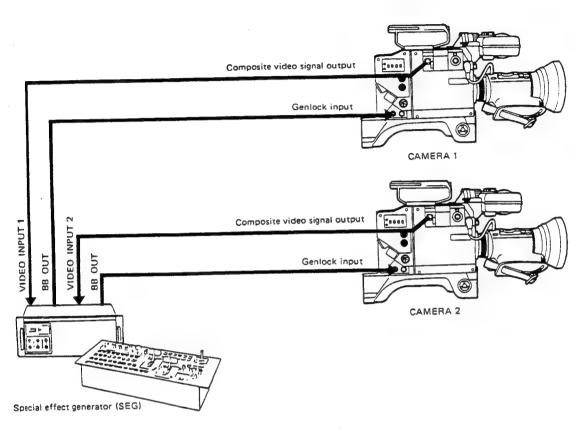
No display appears in the viewfinder screen.

- Are you pressing the RET button on the lens?
- Is the camera's RET switch set to ON?
- Are you monitoring the VTR playback picture?
- Viewfinder screen is darker, or no raster appears. Scenes being shot are not visible in the viewfinte r.
 - Are the viewfinder's contrast and brightness controls set properly?
 - Is the filter turret correctly set? Is the lens irigolosed?
 - Is the camera's RET switch set to ON?

GENLOCK OPERATION

When pictures from more than one camera are processed (fade-in, fade-out, mix/wipe) using a special effect generator (SEG), etc., each camera should be genlocked.

The genlocking is done by supplying the same composite video signal (VBS) or black burst signal (BB) to the GENLOCK input terminal of each camera.



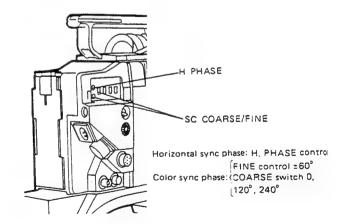
Note

- In case the remote control unit RM-P200 is not used as shown above, the camera's TEST output terminal is used. At this time, be sure that the composite video signal is output to the TEST output terminal. (Refer to page 14.)
- It is not possible to genlock this camera using the play-back signal of the VTR. If you do, it may cause sync disorder or fluctuations in color phase. However, this is not a failure, but because the VTR's playback signal has time axis fluctuations equivalent to wow & flutter of a tape recorder. When the VTR's playback signal has to be used as the reference signal, the signal should be corrected using a time base corrector (TBC), etc.

Phase adjustment

The illustration above shows an example of connecting a special effect generator to the cameras. If more than one camera is used as in this example, the horizontal phase and subcarrier phase of each camera output (VIDEO OUT) should be adjusted and matched with the reference signal supplied to the camera from outside.

For adjustment, use the following switches and controls on the left side of the camera.



SPECIFICATIONS

Color Video Camera KY-25/KY-H25

Camera head

Image pickup device

: 2/3-inch interline CCD x 3 (R, G, B)

Color separation

: 3-color separation prism optical system

Effective number of

: U-Version

pixels

728(H) x 493(V), 360,000 pixels

· F-Version

728(H) x 587(V), 430,000 pixels

Color system

: U-Version

NTSC (R-Y, B-Y method encoder)

: E-Version

PAL (R-Y, B-Y method encorder)

Synchronizing system : Internal (built-in SSG) External (composite video or black

burst signal)

: 2/3" Bayonet Lens mount

Optical filter

: 3200K, 5600K, 5600K + 12.5 % ND

Sensitivity

: f5.6, 2000 lux

Practical minimum

: f1.7 23 lux (+18 dB) illumination

Sensitivity selection

: +9 dB, +18 dB : U-Version

S/N ratio (standard)

60 dB typical (contour correction OFF, gamma 1, bandwidth 4.2 MHz,

Matrix OFF) : E-Version

58 dB typical (contour correction OFF, gamma 1, bandwidth 5 MHz,

Matrix OFF)

Horizontal resolution

Typical 700 TV lines (Y channel) 530 TV lines (R, G and B each

channel signal)

Registration

: Zone 1: 0.05 % or less (circle 80 %

of picture height)

Zone 2: 0.05 % or less (circle of

picture width)

Zone 3: 0.05 % or less (zone outside

the above)

Contour correction

: Horizontal: dual-edged

2H (with comb filter) Vertical:

Video signal output

26-pin connector

; Composite video signal (VBS);

1 Vp-p, and Separate Y. C signals (compatible with S-VHS) or Component signal (Y/R-Y/B for MII or R/G/B . . . 0.7 Vp-p,

75 Ω) . . . switchable

7-pin connector

; Separate Y/C signals (in Y/C 358

or Y/C 443 mode only)

Test output terminal ; Composite video signal (VBS): 1 Vp-p (any one of R, G, or B signal can be selected using the internal select switch (PIX SELECT)

Audio signal output

: ~52 dBm, 600 ohm balanced, ~20 dB

unbalanced (switchable)

Mic input signal

Audio monitor output : Pin jack, 8 ohm, -20 dB

: 6P/XLR-3, -52 dBm, 600 ohm (balanced when low signal is output

and unbalanced when high signal is output)

Electronic shutter

speeds

: *1/60 (normal), 1/250, 1/500,

1/1000 (switchable) (*E-Version:

1/50)

Power source

: 12 V DC (10.5 to 15 V)

: 1.5 A (including the viewfinder Current consumption

VF-P10)

Operating temperature

range

: -5°C to +45°C

Weight

2.8 kg (KY-25) 2.35 kg (KY-H25)

Input signal

Viewfinder VF-P10 (optional with the KY-H25) : Composite video signal 1 Vp-p (high

input impedance)

CRT

: 1.5-inch diagonal 40LB4

Resolution

: 400 lines or more

Indication function

: Tally/top tally (can be switched off) and inside REC lamp

Warning/battery (camera power supply) drop, LOW-L (video output)

drop

VTR tape end, abnormal indication

Power consumption

: 12 V DC, 250 mA Operating temperature

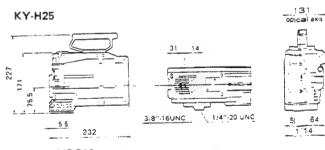
: -20°C to +50°C range

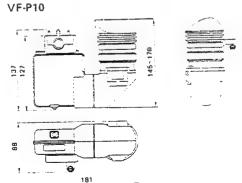
: 650 g Weight

Design and specifications subject to change without notice.

Dimensions (unit: mm)

KY-25 210~259 optical axis 126.5 50 275





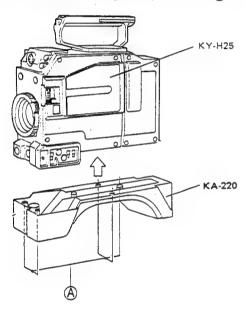
KA-220 SHOULDER PAD

The KA-220 is a shoulder pad exclusively for use with the KY-H25 Color Video Camera.

INSTALLATION

Mount on the KY-H25 using the 5 screws (A) provided with the KA-220.

Tighten the screws from the underside of the pad (bottom). Use a Philips screwdriver for tightening the screws A.



SPECIFICATIONS

Weight : 410 g (0.9 lbs)

Dimensions: 95(W) x 68(H) x 275(D) mm

(3-3/4" x 2-11/16" x 10-7/8")

KY-R25 Instruction

Thank you for purchasing the JVC KY-R25 Color Video Camera. Combined with the JVC BR-S410 S-VHS portable video cassette recorder, this camera forms a camcorder so that a single person can manage camera recording easily.

To gain maximum benefit from the camera, it is suggested that you study this booklet carefully. After reading, retain it for future reference.

CONTENTS

Features
Precautions
Controls, connectors and indicators 2
Installation
Power supply
Before shooting 2
Basic recording procedure
Warning indication and character display
Specifications 3
KA-20 Camera Adapter

PRECAUTIONS

- Do not modify the unit or operate it without cover panel to prevent danger.
- When there is any abnormality (abnormal noise, smell, smoke, etc.) with the unit, immediately turn the power off and contact your nearest JVC-authorized service agent.
- Ambient temperature
 - Do not operate the camera outside a -5°C to +45°C (23°F to 113°F) temperature range. Refer to the corresponding item in the "Specifications" on page 32.
- Where there are strong electromagnetic waves or magnetism, for example near a radio or TV transmitter, transformer, motor, etc., the picture may contain noise and the colors may be incorrect.

FEATURES

 Designed for combination with an S-VHS VTR into a camcorder

When combined with the BR-S410 S-VHS video cassette recorder, this camera forms a camcorder with excellent mobility and utility.

- This 3-CCD camera meets the requirements for high picture quality.
 - More compact, lighter in weight and consumes less power than conventional video cameras which use camera tubes.
 - Low lag, high resistance to image burning and no deflection distortion.
 - As the camera has a high sensitivity and S/N, high picture quality can be obtained in dark places.
 - Excellent in vibration resistance and impact resistance.
 - Virtually no misregistration as the image device is free from the influence of terrestrial magnetism.

Built-in electronic shutter

The scanning of the TV camera is *1/60 sec. (*PAL: 1/50 sec) when converted to a shutter speed; the image will get blurred if the subject is moving at high speed. However, thanks to the built-in electronic shutter function, the shutter speed can be selected in 3 steps: 1/250, 1/500 and 1/1000, the camera goes a long way in analyzing motion, etc.

Character display facility

On the screen of the viewfinder VF-P10, the camera's operating conditions are indicated by characters (STATUS/MODE/WARNING).

While looking into the viewfinder, quick and positive camera operation is possible.

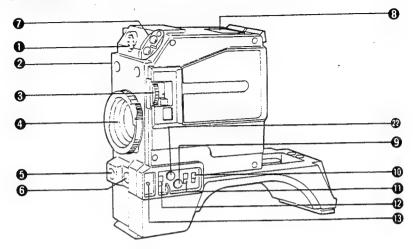
Microcomputer-controlled automatic systems

In addition to auto white/black balance, the auto iris can be controlled by the built-in microcomputer. As a result, in the auto white/black balance adjustment, a highly precise adjustment is possible with ease by one-touch operation. And in the auto iris mode, the optimum amount of light can be selected under any shooting conditions.

- Comprehensive functions
 - 2H contour provided as standard.
 - 3-mode white balance setting
 With white balance, two memories and 3200K preset are
 possible. This is effective in case of an emergency or
 shooting at two locations.
 - Negative signal/positive signal select switch is provided.
 - Built-in color matrix circuit
 - Stereo sound output. If optional stereo microphone MV-P602 is used, stereo sound is output.

CONTROLS, CONNECTORS AND INDICATORS

Camera Head



- Viewfinder connector (VF) Connector for a exclusive viewfinder (VF-P10).
- 2 Lens connector (LENS)
 Connect the cable from the standard lens.
- 6 Filter turret

The turret for the Neutral Density and color temperature conversion filters is provided with four positions.

- 1) CLOSE: Same condition as lens being capped.
- 2) 3200K: For shooting indoors or outdoors with insufficient light.
- 3) 5600K: For shooting outdoors.
- 4) 5600K ND: The 12.5 % ND filter and 5600K color filter are combined for shooting outdoors on a fine day.
- A Lens mount ring
- Auto setup button (AUTO SETUP)

Press this button to adjust the setup (black/white balance) or the white balance automatically and save the state in memory. When the button is pressed once, the white balance is adjusted; when depressed continuously for longer than one second, the setup is adjusted.

Before pressing this button, set white balance mode switch to the AUTO 1 or AUTO 2 (whichever you want to save) position.

- **G** Video recorder start switch (VTR)
 - For start/stop triggering of the VTR.
- Shutter speed select button and indicator lamp (SHUTTER) This button permits speed selection of the electronic shutter. This is effective when shooting fast-moving subject.

SHUTTER 250 500 1000

Every time this button is pressed, the shutter speed will change to 1/250, 1/500 and 1/1000 in this order (cyclic operation). At this time, the indicator lamp comes on.

NORMAL

If this button is pressed, the shutter speed will become *1/60. Usually use in this state. The indicator lamp goes out. (*E-Version: 1/50)

- (3) Carrying handle mounting section
 - Attach the provided carrying handle (KA-232).
- Display select button (DISP SELECT)

This camera has a function to display the setting conditions of various control switches and settings in the viewfinder screen. There are two display screens; every time this button is pressed, the display will change from "no indication" to "screen 1" to "screen 2" repeatedly.

(W White balance mode switch (W BAL)

This switch permits mode selection of white balance.

AUTO 1: Set to either position when activating the auto and setup or auto white balance function. This AUTO 2 camera has two auto white memory circuits and this switch serves as its select switch.

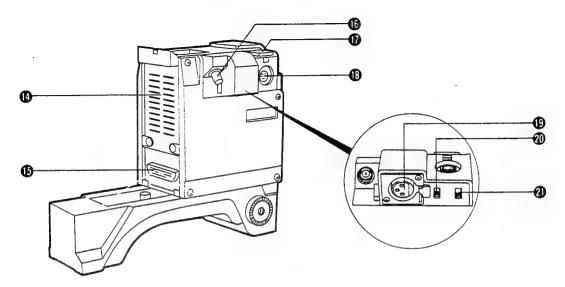
PRESET: For using in the preset (3200K) state.

- Camera/color bar select switch (MODE)
 - CAM: Outputs the video signal from the camera to the VTR.
 - BARS: Outputs the color bar signal to the VTR.
 - NEGA: Outputs the negative video signal from the camera VTR.
- @ Sensitivity select switch (HI-SENS)

For use in low light conditions, the camera sensitivity gain can be boosted by +9 dB or +18 dB. Normally, set this to "0 dB".

(BOperation switch (CAMERA/VTR)

3-step select switch. Selects "ON", "OFF" of the camera power and VTR power-save mode.



® VTR mount

Mount an S-VHS VTR compatible with the KY-R25. (At present the VTR to be used is the JVC BR-S410, sold separately.)

® VTR connector (50 pin)

Connect the 50-pin connector of BR-S410 video cassette recorder.

(Test output connector (TEST OUTPUT)

The signal selected by the internal "PIX SELECT" switch is output here. Either composite video signal (VBS), or B, G, R signal can be selected as an output. This is factory-preset to the composite video signal output.

Exclusive microphone mounting shoe

Shoe for mounting the exclusive microphone M-K50 (monaural type) or MV-P602 (stereo type).

® Exclusive microphone input socket (MIC) Input socket for the exclusive microphone. (MIC INPUT)

Input socket for the microphone with a 3-pin Cannon connector. The input is parallel with MIC connector (6)

Mic output select switch (MIC)

Switches between monaural (L-ch) and stereo (R-ch/L-ch) in accordance with the VTR's audio track specification when recording is to be made onto the VTR via microphone connector (8).

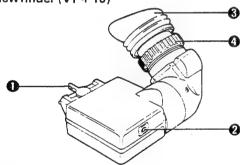
1 VF AUX video select switch (RET)

When the VTR is set to the playback mode and if this switch is set to ON, the playback picture can be monitored in the viewfinder. This serves the same function as the RET switch on the lens.

2 Zebra button (ZEBRA)

Switches the zebra pattern video level indicator on the viewfinder ON/OFF.





Slide locklever

After the viewfinder has been attached to the camera, the viewfinder can be slid to the left and right (by 40 mm) if this lever is loosened.

Taily lamp

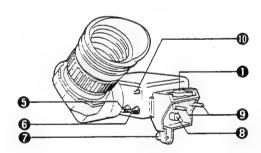
This LED comes on to indicate the recording mode. To switch it off, set switch 0 to OFF.

6 Eyepiece

Focusing adjustment is possible.

Eyepiece fixing ring

Loosen and adjust the eyepiece back and forth to match you vision.



- 6 Contrast control (CONT)
- 6 Brightness control (BRIGHT)
- **O** Lock screw

Use to lock the viewfinder onto the camera.

3 VF connector

Directly connected to the video camera.

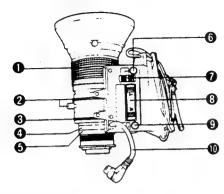
Viewfinder fixing pins

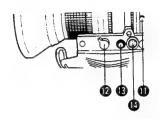
Insertionpins for use in attaching to the video camera.

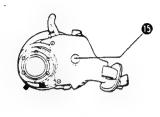
Tally switch (TALLY)

Turns the top tally lamp ② off even when the camera (VTR) is recording. The REC indicator inside the view-finder will be kept ON.

Zoom Lens (HZ-516B, optional)







- Focus ring
 - Focus adjustment ring.
- 2 Zoom lever/zoom ring
 - Ring and lever for manual zooming.
- 1 Iris ring

When the iris mode switch ? is set to "M" (manual), the iris can be opened and closed manually using this ring. When it is set to "A", the iris is opened and closed automatically.

- Back focus ring
 - For the back focus adjustment, turn this ring.
- 6 Macro ring

If the ring is turned fully in the direction of the arrow, macro shooting at a distance of about 9 cm from the subject will be possible.

6 Momentary iris switch

Even during the manual iris operation with the iris mode switch set to "M" (manual), iris control can be automatic as long as this button is kept depressed.

- lris mode switch
 - A: For auto iris operation
 - M: For manual iris operation

- R: This position can not be used.
- @ Zoom servo lever

The speed and direction of the servo zooming is controlled by this see-saw switch.

@ Return switch (RET)

The return video signal from the VTR can be monitored in the viewfinder while this switch is depressed.

1 Lens cable

Connect the lens connector on the camera head.

- Securing knob
 - For fixing back focus ring 4.
- 2 Zoom mode knob (ZOOM)
 - S: For power zooming
- M: For manual zooming
- B Focus servo connector

For connecting the optional focus servo unit.

@ Zoom servo connector

For connecting the optional zoom servo unit.

(VTR) switch

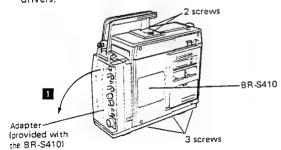
For the start/stop operation of the VTR.

INSTALLATION

Mounting the S-VHS VTR (BR-S410)

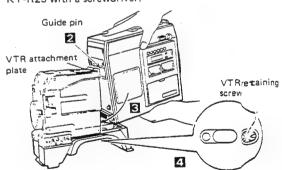
Remove the adapter from the BR-S410.

The adapter is secured to the BR-S410 with three screws on the bottom and two screws on the handle grip on top. To loosen these screws, use flathead and phillips screw-drivers.

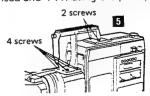


- Aligning the guide pin of the BR-S410 to the V-groove on the VTR attachment plate of the KY-R25, press the BR-S410's 50-pin connector against its counterpart on the KY-R25.
- After confirming that the 50-pin connections have been made correctly, secure the two units by tightening the VTR

retaining screw from underneath the shoulder pad of the KY-R25 with a screwdriver.

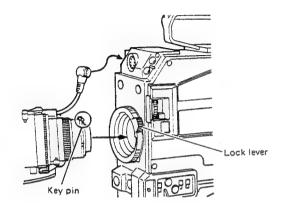


Install the carrying handle (KA-232, accessoy) onto the camera head and VTR using the phillips screwir iver.



Lens Installation (Optional HZ-516B)

- Be careful of the key pin of the lens and slot of the mount ring groove, then insert the lens flange into the mount groove firmly.
- 2 Turn the lock lever clockwise to fix the lens.
- Connect the lens cable to the camera head.

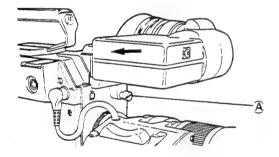


Note:

Make sure that the lens is firmly attached. Otherwise, the back focus adjustment may be incorrect.

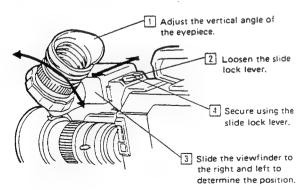
Viewfinder Installation (VF-P10)

- Mate the viewfinder fixing pin with the mounting hole of the camera head, then insert.
- Insert it all the way, then confirm that the viewfinder has been positively connected and turn viewfinder fixing screw A clockwise to lock it.

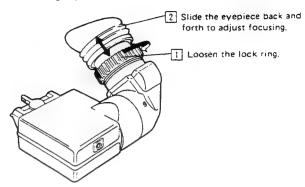


• Eyepiece adjustment

Vertical angle and left/right slide adjustment



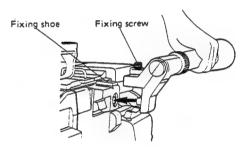
· Focusing adjustment



Microphone Installation

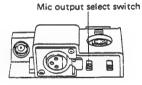
Exclusive microphone (M-K50 or MV-P602, optional)

- Insert the microphone into the mic holder fixing shoe on the right top of the camera.
- 2 Secure the microphone using the fixing screw.



Set the mic output select switch (illustrated below) according to the type of microphone used.

.MONO : For M-K50 STEREO : For MV-P602



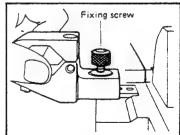
Note:

 Lens motor noise or mechanical friction noise may be picked up by the microphone and recorded. Check possible noise conditions in advance.

Ordinary microphone

Install the microphone onto the camera head using the optional mic holder (Part No. SCUA30312, service parts).

Insert the mic holder into the mic holder fixing shoe on the right top of the camera, then fix it using the fixing screw.



- 2 Connect the microphone output to the MIC connector of the camera head.
- 3 Set the mic output select switch to "MONO".

POWER SUPPLY

 The KY-R25 camera is powered from the VTR via the 50nin connector.

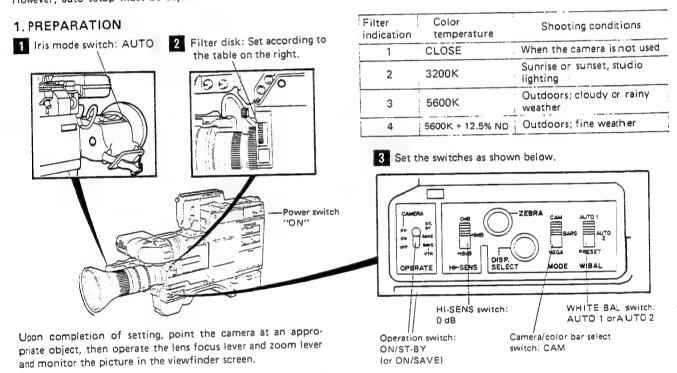
Supply power to the VTR using the optional NB-G1 battery pack or *AA-P200/AA-P250 AC power adapter. To use the

battery pack, the optional battery holder (accessory of BR-S410) is also necessary. For the power supply method or connection, refer to the instruction manual of the relevant power unit or the VTR. (*AA-P200: U-Version only)

BEFORE SHOOTING

To obtain clear pictures with correct tints, perform back focus and auto setup adjustments. As a rule, back focus adjustment has only to be done when a different lens is mounted. However, auto setup must be adjusted before each shooting session.

For this adjustment, supply power to he camera/VTR combination and set the controls and switches as follows:



2 BACK FOCUS ADJUSTMENT

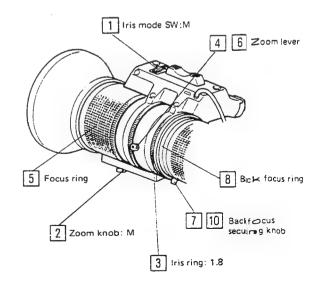
Perform this adjustment while observing the monitor TV or viewfinder.

- Set the iris mode switch on the lens to the "M" position.
- Set the zoom knob on the lens to the "M" position. Set the iris ring to "f1.8" (open).

At this time, if the lighting is too strong, reduce lighting or move to a darken place.

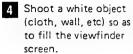
- [4] Fully turn the zoom lever to the TELE position.
- 3Bring into focus using the focus ring.
- Fully turn the zoom lever to the WIDE-angle position.
- Loosen the back focus securing knob.
- Turn the back focus adjustment lever, then adjust it to a position where the focusing is best.
- In Perform fine-tuning by repeating steps 4 to 8 a few times.
- Finally, tighten the back focus securing knob.

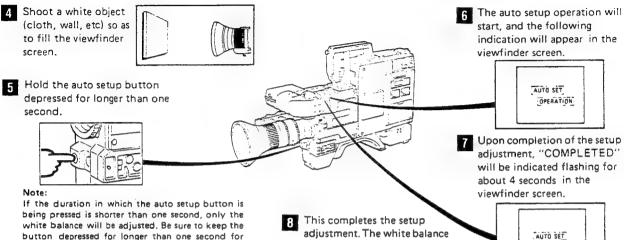
The back focus adjustment is more accurate when the distance between the subject (pattern) and camera is more than 3 m (10 ft.).



3. AUTO SETUP ADJUSTMENT (BLACK/WHITE BALANCE ADJUSTMENT)

- Start adjustment following steps 1 to 3 (Refer to "1. PREPARATION") described previously.
- Auto setup will be performed in the order of black, white and black for adjustment of balance.





Note: If the duration in which the auto setup button is being pressed is shorter than one second, only the white balance will be adjusted. Be sure to keep the button depressed for longer than one second for adjustment of the setup. For auto white balance, refer to page 28.

state is automatically held in the built-in memory circuit.

COMPLETED

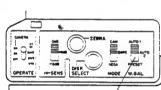
NOTE -

second

White balance memory

The KY-R25 have two built-in white balance memory circuits and different color temperature states can be stored in memory, individually.

If the above auto setup adjustment is performed with the W.BAL switch set to "AUTO 1". The white balance state will be held in memory "AUTO 1". Likewise, if it is done with the switch set to "AUTO 2", it will be held in memory "AUTO 2".



W.BAL switch

Display in the viewfinder

If the above auto setup adjustment has not been done correctly, the "COMPLETED" indication as described in 7 above will not appear in the viewfinder screen.

Instead, the following error message or more light message will appear.

If the error message appears, check for the following causes and items, then perform auto setup adjustment again.

Note:

- The error message and more light message will flicker in the screen for about 4 sec. just as in the "COM-PLETED" indication, then go out. Pay attention to the contents of the indication.
- · Error message during auto black balance

LENS NOT CLOSE?

Cause:

The lens does not perform auto

operation.

Remedy: Check for lens cable connection.

AUTO BLACK LENS NOT CLOSE?

(Display)

 Error message during auto white balance (including the more light message)

(The display shows an example in which the W.BAL switch is set to "AUTO 1".)



Error messages

LOW LIGHT ERROR

Cause: Insufficient amount of light.

Remedy: Increase lighting or increase sensitivity using the

HI-SENS switch. (If the sensitivity is increased, the

S/N ratio will deteriorate.)

OBJECT ERROR?

The subject shot is not suitable. Cause:

Remedy: Check if the subject is a white object and change the subject if necessary.

OVER LIGHT ERROR

The incident light is too strong. The color temperature filter is not suitable.

Remedy: 1. Check to see if strong light such as sunlight or its reflection from the subject is directly introduced to the video camera.

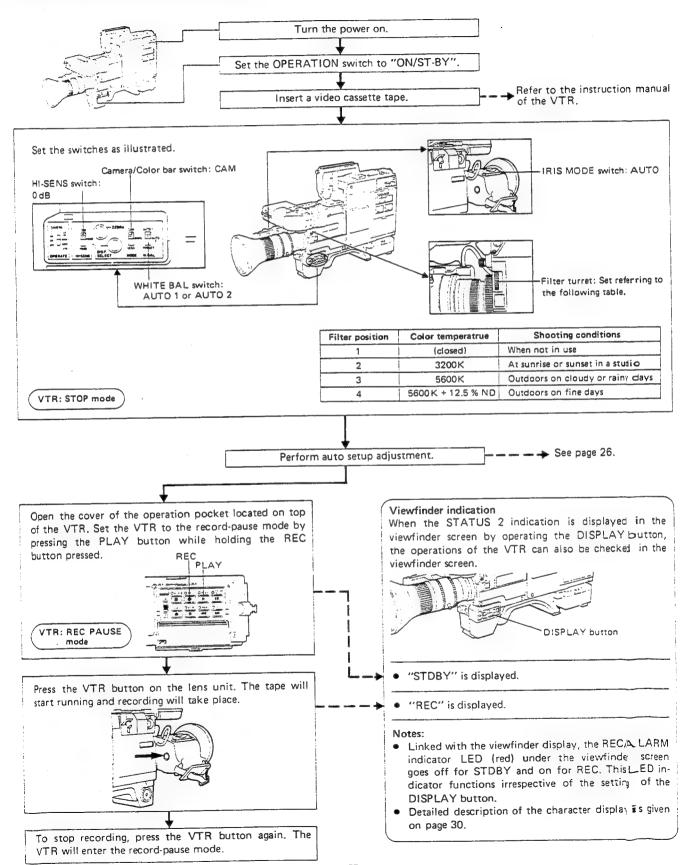
2. Set the filter to the correct position.

More light message

MORE LIGHT

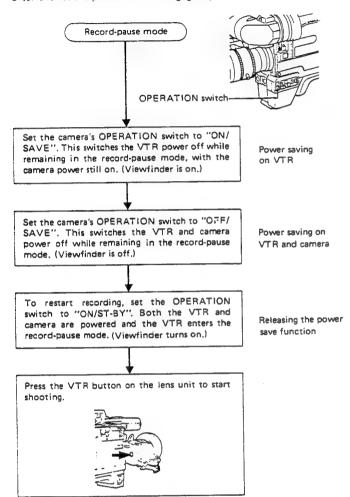
This indication is somewhat different from an error message. This indication appears when the amount of light is insufficient, indicating that the white balance has been automatically adjusted to a level not detrimental to shooting. Althouth this is not incorrect, it is recommended that the amount of light be increased

BASIC RECORDING PROCEDURE



POWER SAVING OPERATIONS

Power save functions are incorporated in this system, cutting the power consumption of either the VTR or both the VTR and camera while in the record-pause mode. To save power, after the record-pause mode is engaged, proceed as follows:

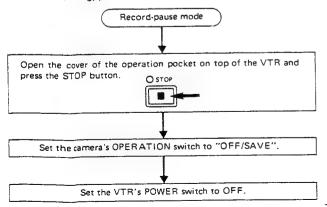


Note:

If the VTR's OPERATION button is pressed in the power save mode, the VTR is turned on and enters the stop mode automatically from the record-pause mode. Recording cannot be restarted by the above-mentioned procedure from this mode. If this happens, first set the VTR to the record-pause mode.

Ending Recording

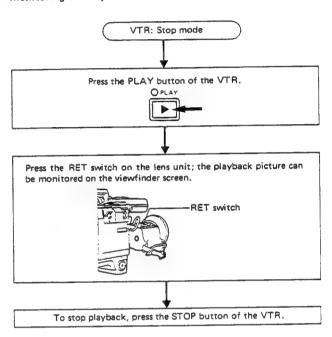
To end recording, proceed as follows:



Note:

If the OPERATION switch is set to "OFF/SAVE" while in the record-pause mode, the power save function operates and the power of the camera and VTR is turned off while in the record-pause mode, in which the tape is still loaded around the head drum of the VTR. To avoid damaging the tape and video heads, be sure to follow the procedure described above.

Monitoring the Playback Picture



White balance adjustment

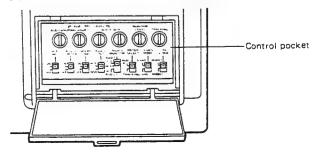
If the camera is moved from indoors to outdoors or vice versa, the type of light source changes. This requires readjustment of white balance.

White balance can be adjusted by following the same procedure as described in "AUTO SETUP ADJUSTMENT" on page 26, but the way the auto setup button is pressed differs. For adjustment of white balance, press the auto setup button once and release it immediately. Be careful not to keep it depressed, otherwise the auto setup adjustment mode will be engaged.

The display in the viewfinder shows AUTO WHITE, instead of AUTO SET. The rest is the same as for auto setup adjustment.

Audio Operation and Level Control

All controls related to audio recording are located in the control pocket of the VTR. For operations of these controls refer to the instruction manual of the VTR.

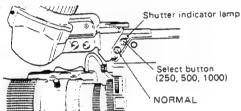


Electronic shutter

This function goes a long way when analyzing the motion of a fast moving object, etc. The position can be changed in 3 steps: 1/250, 1/500 and 1/1000, in addition to normal 1/60 sec.

As the shutter speed is made faster to 1/250, 1/500 and 1 1000, the sensitivity will drop; therefore, shooting at a dark place is not possible. For selection, use the shutter speed select buttons (two) on top of the filter turret to the right side of the camera.

When the power of the camera is switched "ON", 1/60 sec. (U-Version)/1/50 sec. (E-Version) is set as an initial setting. At this time, the shutter indicator lamp shown below does not



Selecting the shutter speed

To change the shutter speed, press the upper button (250, 500, 1000) of the two buttons.

The shutter speed will change from 1/250, to 1/500 to 1/1000 sequentially every time this button is pressed and cycle in a loop. At this time, the shutter indicator lamp will come on. To set to the normal 1/60 sec. (U-Version)/1/50 sec. (E-Version), press the lower button (NORMAL) of the two to return to the initial state.

The shutter speed setting can be confirmed by observing the viewfinder screen using the character display function of this camera.

For the display indication, refer to the character display indication on page 30.

Contour (contour compensation) ON/OFF switch

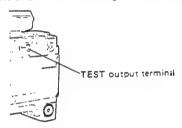
To provide a sharper image, this camera has a built-in 2H contour compensation circuit for both vertical and horizontal signals. This circuit is factory-preset to ON.

The position of the contour switch can be confirmed in the character display. For details, refer to the character display description on page 30.

To switch off the contour compensation, remove the side cover on the right of the camera, set the CONTOUR switch on the internal CP board to "OFF". For detailed operation, consult your dealer.

Selecting the TEST OUT signal

The TEST output terminal on the left of the camera is factory-preset so that the composite video signal (VBS) is output. However, it is also possible to output any one of R, G, or B signal by internal switch. (* R, G, or B signal does not have a color component. Therefore, even if it is connected to a color monitor, it appears as a monochrome signal on the screen.)



To switch this, remove the side cover on the right of the camera, then change the setting of the "PIX SELECT" switch on the internal CP board. When the test output signal is changed, the signal to be monitored on the viewfinder streen is also changed accordingly.

For further detailed operation, consult your JVCauthorized

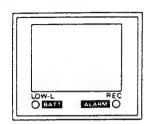
The type of signal to be output to the TEST output terminal can be confirmed in the viewfinder screen using the display function of this camera.

Refer to the character display indication described later.

WARNING INDICATION AND CHARACTER DISPLAY

Warning indication using LEDs

The viewfinder includes the following indicator lamps, giving a warning during shooting.



LOW-L/BATT (red)

LOW-L: Lights when amount of light is too low. Even if the lamp is lit, recording can be done but the picture will be a dark: however, this indicates that additional lighting is necessary.

BATT: Flashes when the battery in the camera or VTR is almost exhausted.

• REC (green)

REC: The REC (recording) lamp lights interlocked with the indicator lamp in front of the viewfinder.

ALARM: Flashes when the VTR has trouble or the tape comes to the end.

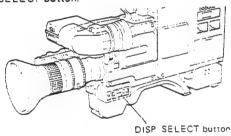
Character display indication

The display indications include the STATUS indication, MODE indication and WARNING indication; the details of each are as follows:

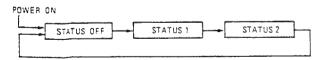
■ STATUS indication

Various control switches and their settings are indicated by characters.

There are two display screens, which can be selected using the DISP SELECT button.



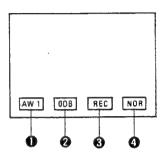
The DISP SELECT button is a push-button switch, which changes as follows every time it is pressed.



The STATUS OFF indicates no-indication state, to which setting the display is always initialized when the operation switch is switched ON from OFF.

STATUS 1 indication

The following display appears in STATUS 1 mode.



Position indication of the W.BAL switch

PRE: Indicates that the W.BAL switch is set to the "PRESET" position. The white balance of the camera is set to the preset (3200K) state and the

auto setup function cannot be activated.

AW 1: Indicates that the W.BAL switch is set to the "AUTO 1" position. The white balance of the camera is set to the balance which is held in the "AUTO 1" memory of the camera.

If the auto setup adjustment is made while this is indicated, the white balance will be automatically adjusted and the balance at this point will be rewritten to the AUTO 1 memory.

AW 2: Indicates that the W.BAL switch is set to the "AUTO 2" position. Just as in the above AUTO 1, the white balance of the camera is set to the balance stored in the "AUTO 2" memory. If the auto setup adjustment is made while this is indicated, the AUTO 2 memory will be rewritten.

* Fo the auto setup adjustment, refer to page 26.

2 Position indication of the HI-SENS switch

<u>ODB</u>: Indicates that the HI-SENS switch is set to the "OdB" position.

9DB: Indicates that the HI-SENS switch is set to the "+9dB" position.

[18 DB] :Indicates that the HI-SENS switch is set to the "+18 dB" position.

Indication of the VTR mode

STD BY: Indicates that the VTR is in the ST-BY mode.

REC: Indicates that the VTR is in the REC mode.

4 Electronic shutter speed indication

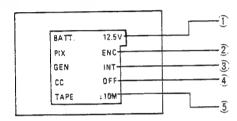
NOR: Indicates that the shutter speed is set to 1/60 sec. (U-Version)/1/50 sec (E-Version)

250: Indicates that the shutter speed is set to 1/250 sec. Indicates that the shutter speed is set to 1/500 sec.

1000: Indicates that the shutter speed is set to 1/1000 sec.
• For changing the electronic shutter speed, refer to page 29.

STATUS 2 indication

The following display appears in the STATUS 2 mode.



(1) Battery voltage indication

The battery voltage will be indicated digitally.

2 Signal indication of TEST OUT/VF OUT

The type of video signal appearing at the camera's TEST OUT terminal and viewfinder screen is indicated.

[PIX ENC]: The encoder output (Composite) signal is output.

PIX R: The red signal is output.
PIX G: The green signal is output
PIX B: The blue signal is output.

Note:

- The camera is factory-preset to the "PIX ENC" position. To obtain another signal output, change the setting of the "PIX SELECT" switch inside the camera.
- When the foregoing PIX R, PIX G or PIX B signal is output, the signal does not have a color component.
 Therefore, even if it is connected to a color monitor, it appears as a monochrome signal on the screen.

3 GENLOCK mode indication

Indicates the genlock mode of the camera.

GEN INT: Operates by the internal SSG (sync signal generator) of the camera (INT mode).

4 Contour indication

CCON: The contour compensation is being made.

CC OFF: The contour compensation is not being made.

- To switch ON or OFF the contour compensation, use the internal switch.
- 3 Remaining tape indication

When the amount of remaining tape in the VTR becomes low, the remaining time is indicated.

TAPE ↓ 10M: When the tape remaining time becomes less than 10 minutes, this is indicated.

When the remaining tape time is 10 minutes or more, nothing is indicated.

2 MODE indication

The execution mode during the auto setup adjustment will be indicated.

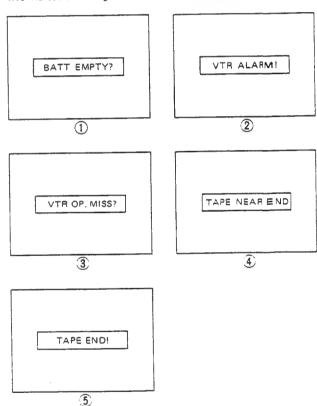
When the auto setup button is pressed, if the status indication is displayed, it will disappear, and replaced by the mode indication.

Upon completion of the auto setup operation, the results will be indicated for about 4 seconds, then the original status indication will be resumed.

For the details of the execution mode indication, refer to "auto setup adjustment" on page 26.

3 Warning display

When the VTR or camera malfunctions, the display indicates the type of malfunction. This warning display has priority over other indications (STATUS or MODE). The following five indications are given.



1 BATT EMPTY? :

This display appears when the battery is becoming low. As soon as possible after this display appears, replace the battery with a charged one.

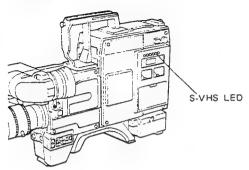
2 VTR ALARM!:

This display appears when there is an abnormality in tape running or when moisture has condensed on then ead drum.

3 VTR OP. MISS? :

This display appears when the VTR is not reording properly after the VTR button on the front panel or lens unit of the camera has been pressed. Possible causes for this are as follows (check each possible cause).

A regular VHS cassette is inserted in the S-VHS mode. Check the cassette tape. The S-VHS LED will blink in



The VTR has not been engaged in the record-pause mode.

First set the VTR to the record-pause mode.

The STOP button on the VTR was pressed, instead of the VTR button on the camera, during recording.

4 TAPE NEAR END :

This display appears during recording when the remaining tape length is less than three minutes. To continue recording, a new tape should be inserted.

5 TAPE END! :

This display appears when the tape is coming to an end during recording. With this indication, the VTR automatically enters the stop mode, warning that recording is possible only with a new tape.

TROUBLESHOOTING

- Auto setup or auto white balance adjustment cannot be completed.
 - is the filter turret correctly set?
 - Is the subject you are shooting a colored object?
- Auto setup or auto white balance adjustment cannot be performed.

No display appears in the viewfinder screen.

- Are you pressing the RET button on the lens?
- Is the camera's RET switch set to ON?
- Are you monitoring the VTR playback picture?
- Viewfinder screen is darker, or no raster appears. Scenes being shot are not visible in the viewfinder.
- Are the viewfinder's contrast and brightness controls set properly?
- Is the filter turret correctly set? Is the lens iris colosed?
- Is the camera's RET switch set to ON?

SPECIFICATIONS

Color Video Camera KY-R25

Camera head

Image pickup

device

: 2/3-inch interline CCD x 3 (R, G, B)

Color separation optical system

: 3-color separation prism

Effective number of pixels

· 11-Version

728(H) x 493(V), 360,000 pixels

: E-Version

728(H) x 587(V), 430,000 pixels

Color system : U-Version

NTSC (R-Y, B-Y method encorder)

: E-Version

PAL (R-Y, B-Y method encorder)

Synchronizing system

Internal (built-in SSG)

Lens mount : 2/3" Bayonet

Optical filter : 3200K, 5600K, 5600K + 12.5 % ND

: f5.6, 2,000 lux Sensitivity

Practical minimum

illumination

: f1.7 23 lux (+18 dB)

Sensitivity selection S/N ratio (standard) : +9 dB, +18 dB : U-Version

60 dB typical (contour correction OFF, gamma 1, bandwidth 4.2 MHz,

Matrix OFF) : E-Version

58 dB typical (contour correction OFF, gamma 1, bandwidth 5 MHz,

Matrix OFF)

Horizontal resolution : Typical 700 TV lines (Y channel)

530 TV lines (R, G and B each

channel signal)

Registration : Zone 1: 0.05 % or less (circle 80 %

of picture height) Zone 2: 0.05 % or less (circle of

picture width)

Zone 3: 0.05 % or less (zone outside the above)

Contour correction : Horizontal: dual-edged

Vertical: 2H (with comb filter)

Video signal output

50-pin connector

; Composite video signal (VBS);

1 Vp-p, Separate Y/C signals (com-

patible with S-VHS) or

Component signal (Y/R-Y/B-Y)

Test output terminal

(50-pin connector)

; Composite video signal (VBS): 1 Vp-p (any one of R, G, or B signal can be selected using the in-

ternal select switch <PIX SELECT> Audio signal output : -52 dBm, 600 ohm balanced, -20 dB

unbalanced (switchable), monaural or stereo output depending on the

microphone used

Mic input signal

Audio monitor output : Pin jack, 8 ohm, -20 dB

6P/XLR-3, -52 dBm, 600 ohm (balanced when low signal is output and unbalanced when high signal is

output)

Electronic shutter

speeds

: *1/60 (normal), 1/250, 1/500, 1/1000 (switchable) (*E-Version:

1/50)

Power source

: 12 V DC (10.5 to 15 V)

Current consumption

: 1.4A (including the viewfinder

VF-P10)

Operating temperature

range

: -5°C to +45°C

Weight

: 2.4 kg (without VF-P10)

Viewfinder VF-P10

Input signal

: Composite video signal 1 Vp-p (high

input impedance)

CRT

: 1.5-inch diagonal 40LB4

Resolution

: 400 lines or more

Indication function

: Tally/top tally (can be switched

off) and inside REC lamp Warning/battery (camera power supply) drop, LOW-L (video output)

drop

VTR tape end, abnormal indication

Power consumption

: 12 V DC, 250 mA

Operating temperature

range

: -20°C to +50°C

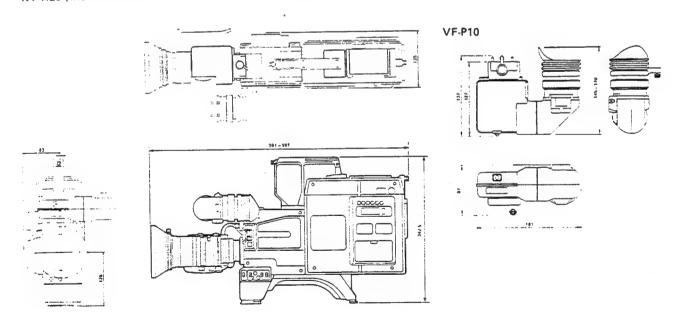
Weight

: 650 g

Design and specifications subject to change without notice.

• Dimensions (Unit: mm)

KY-R25 (with Video Recorder BR-S410 and Lens HZ-516B)



KA-20 CAMERA ADAPTER

(Exclusive camera adapter for KY-R25 Color Video Camera)

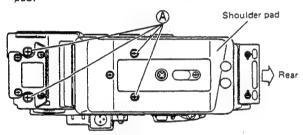
 KA-20 is a Camera Adapter designed to attach a separate type VTR to the KY-R25 color video camera.

PRECAUTIONS

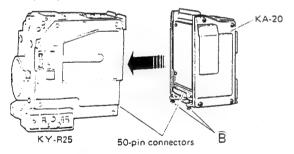
- KA-20 Camera Adapter is for the exclusive use of the KY-R25 color video camera, and it cannot be adapted to any other camera.
- To set the two units of KA-20 and KY-R25, the optional carrying handle KA-231 is necessitated.

INSTALLATION

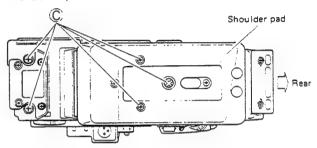
- In the case the VTR and carrying handle are attached to the KY-R25 video camera, remove them first referring to the article "VTR Installation" in the instruction book of KY-R25.
- The illustration below shows the bottom view of the shoulder pad mounted to the KY-R25. Loosen four screws
 with a philips screwdriver. Then remove the shoulder pad.



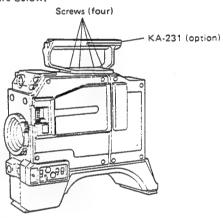
 Attach KA-20 to KY-R25's rear side by connecting their 50-pin connectors correctly. Turn two screws (B) clockwise with philips screwdriver to secure KA-20.



 Attach the shoulder pad to the camera head. Turn five screws © clockwise with philips screwdriver to secure the shoulder pad.



 Attach the optional carrrying handle KA-231 to the top of the camera head with four screws privided with KA-231. See the figure below.



SPECIFICATIONS

Weight : 620 g

Dimensions: 114(W) x 160(H) x 89(D) mm

Design and specifications are subject to change without notice.

NOTE

Camera adapter KA-20 Shoulder pad KA-220 Viewfinder VF-P10 Tripod base KA-500X Carrying handle KA-231 Carrying handle KA-232 Carrying case CB-P410

Although model names KY-17 and KY-25 are not stated in the instruction manuals of the above accessories for the KY-17/25 series, the above accessories can be connected to both KY-17/25 series as well as KY-15/20 series cameras.

JVC Service Manual

For remaining sections of this booklet contents the servicing instructions. Following sections are for use by qualified personnel only.



MODEL KY-25/KY-R25

TABLE OF CONTENTS

WARNING:

THE REMAINING PORTION OF THIS TABLE OF CONTENTS LISTS THE SERVICING INSTRUCTIONS. FOLLOWING SECTIONS ARE FOR USE BY QUALIFIED PERSONNEL ONLY.

Section	n Title	Page
	Important Safety Precautions	
[1.	INSTRUCTIONS (Top of page)	1 - 1
2.	DISASSEMBLY	2 - 1
3.	ADJUSTMENT PROCEDURE	3 - 1
4.	REPACKINGS	4 - 1
5.	EXPLODED VIEWS AND PARTSLIST	5 - 1
6.	CHARTS AND DIAGRAMS	6 - 1
7.	ELECTRICAL PARTS LIST	7 - 1

SECTION 2 DISASSEMBLY

2.1 FUSE REPLACEMENT

 KY-R25 doesn't have any fuse. When replace the fuse, refer to the VTR's service manual.

Before replacing a fuse, the reason why it blew should be investigated to prevent trouble from spreading. The malfunction should be repaired before replacing the fuse.

- (1) Before replacing the fuse, set the Power switch to OFF.
- (2) Fuse is built in the KA-20 camera adapter.
- (3) Remove the right side cover as shown in Section 2.7.
- (4) Remove the GL board, then replace the new fuse.

Note: Refer to 2.7 Removing the side cover and 2.8.1 of Removing the GL board.

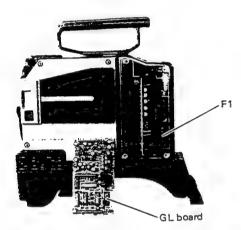


Fig. 2-1

For the protection of the camera and for your safety, replace with a fuse with the specified part number.

USA and Canada: QMF51U1-2R5; 2.5 A, 125 V Europe: QMF51A2-2R5; T2.5 A, 250 V

2.2 REMOVAL OF CAMERA ADAPTER

(1) Remove four screws ① fixing the top handle and remove the handle.

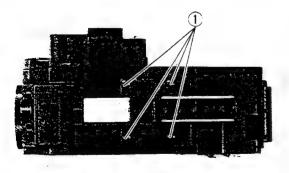


Fig. 2-2

(2) Remove five screws ② and the shoulder pad KA-220 if provided.

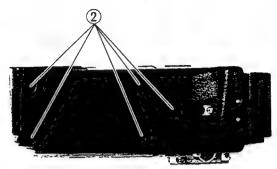


Fig. 2-3

(3) Loosen two screws 3 on the bottom. (Do not remove them.)

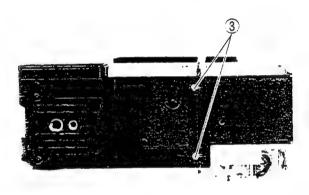


Fig. 2-4

(4) Pull the adapter backward to remove it.

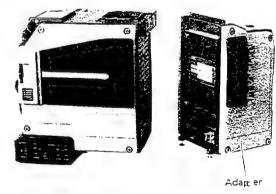


Fig. 2-5

2.3 REMOVING THE SIDE COVERS

(1) Left side cover:

Loosen four screws 4. (Do not remove them.)

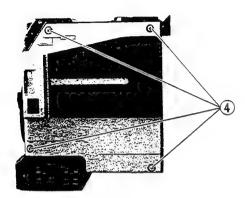


Fig. 2-6

(2) Right side cover:

Loosen four screws (5). (Do not remove them.)

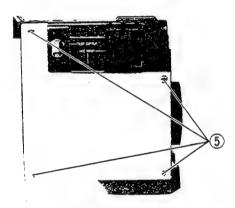


Fig. 2-7

2.4 REMOVING THE OPTICAL FILTER DISC

- (1) Remove the left side cover as described in 2.3 (1).
- (2) Loosen two screws 6. (Do not remove them)
- (3) Hold the upper and lower sides of the filter holder with your fingers and pull it out.

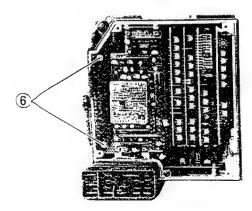


Fig. 2-8

2.5 REMOVAL OF PRINCIPAL CIRCUIT BOARDS (CAMERA HEAD)

2.5.1 Removing the plug-in circuit board

The circuit boards named PR-1, PR-2, SE and CP which are located on the bottom rail are to be removed using the board remover tool (SC41039) used for the former KY series camera.



Fig. 2-9

2.5.2 Removing the CC board

Remove four screws 7 and take out the CC board.

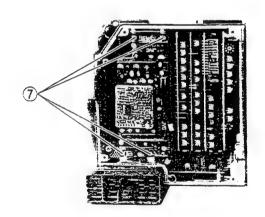


Fig. 2-10

2.5.3 Removing the PP board

(1) Remove two screws 8.

(2) Remove a connector (A) and slide the PP board toward right (⇔) to remove.

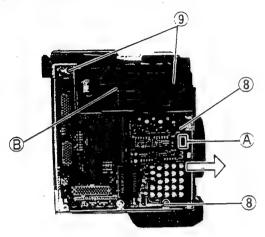


Fig. 2-11

2.5.4 Removing the AU board

(1) Remove two screws (9) which secure microphone amp block (B) on the frame. (refer to Fig. 2-11)

(2) Remove a connector (B)' and take off the block.

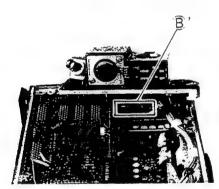


Fig. 2-12

(3) Remove two screws on the block, then, remove the AU board.

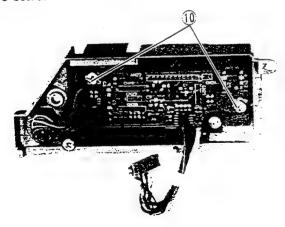


Fig. 2-13

2.5.5 Removing the MT board

(1) Remove the Plug-in boards and microphone amp block. (Refer to Section 2.5.4 (1), (2).)

(2) Remove the PP board. (Refer to Section 2.5.3.)

(3) Remove four screws ① on the MT board.

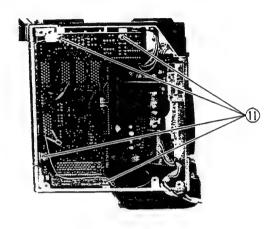


Fig. 2-14

(4) Remove a screw (1) 'and take out the sliderail (C) .

(5) Remove the connector CN27 ① .

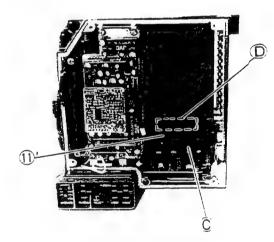


Fig. 2-15

2.5.6 Removing the PS board

- (1) Remove the MT board as shown in 2.5.5.
- (2) Remove a screw (2) and stud screw (3).

Note: Bottom cover can be removed if the power transistor check is required.

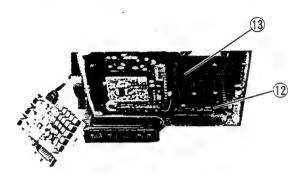


Fig. 2-16

2.5.7 Removing the SW board

(1) Remove two screws (14) which fixing the CC board and remove a screw (14) '.

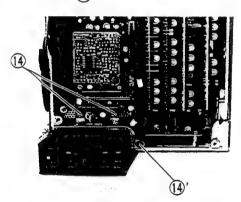


Fig. 2-17

(2) Remove a screw (5) on the bottom.

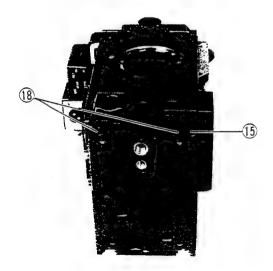


Fig. 2-18

- (3) The switch panel can be pulled out together with the switch and SW board.
- (4) Remove two screws 16.

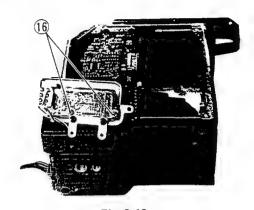


Fig. 2-19

2.6 REMOVAL OF OPTICAL BLOCK

2.6.1 Removing the optical assembly

(1) Remove top two screws and two screws (shown in Fig. 2-18) as the front panel is fixed on the optical block.



Fig. 2-20

(2) Remove a screw 19 on the PP board

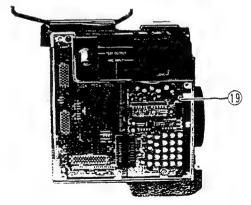


Fig. 2-21

(3) Remove the connector (a) on the CC board.

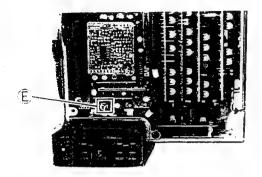


Fig. 2-22-a

(4) Remove the Plug-in boards (Rerfer to the section 2.5.1) and remove the connector $\stackrel{\frown}{E}$ on the MT board.

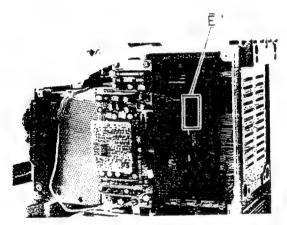


Fig. 2-22-b

(5) Take the optical block assembly out of the camera frame. Ensure the shield case may not damage the PWBs or wiring.

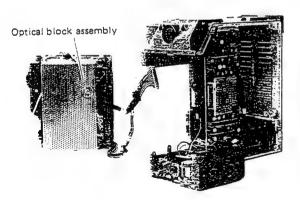


Fig. 2-23

2.6.2 Removing the image process boards

1. Removing the SA board

(1) Remove two screws 20 then remove the SA board.

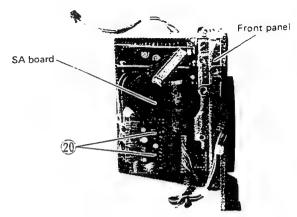


Fig. 2-24

2. Removeing the DR board

(1) Remove five screws (21) which are fixing the shield case

(2) Remove the shield case G.

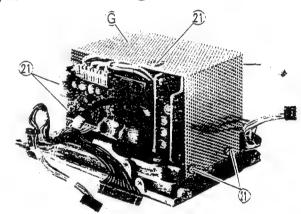


Fig. 2-25

(3) Remove two screws 22 on the DR board.

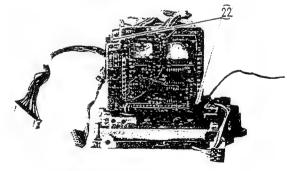


Fig. 2-26

Note: IS boards are fixed as a combination with CCD.

They could be removed from the CCDsas they are connected with socket. However, renoving the IS board is not recommended to prevent connection error or unstable contact.

2.6.3 Replacing the CCD assembly

(1) Remove four screws 23. and the front panel (H).

Note: The CCD can not be replaced independently. Replace it with optical block assembly.

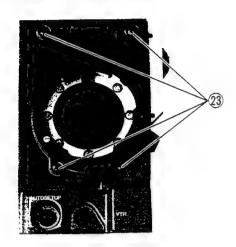


Fig. 2-27

(2) The SA, DR boards and front panel are not assembled on the replaced optical block.

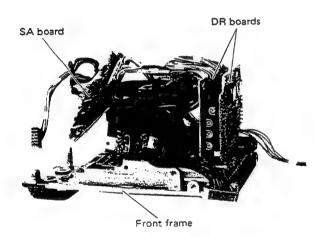


Fig. 2-28

(3) Assemble those on the new optical block removed from the former unit.

2.7 REMOVAL OF SIDE COVERS (KA-20 ADAPTER)

Loosen four screws (1). (Do not remove them.)

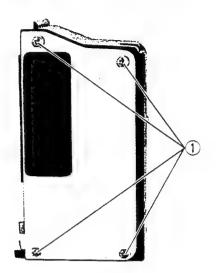


Fig. 2-29

2.8 REMOVAL OF CIRCUIT BOARDS (KA-20 ADAPTER)

2.8.1 Removing the plug-in circuit boards

Hold the board by the top and bottom, then, pull the board outward.

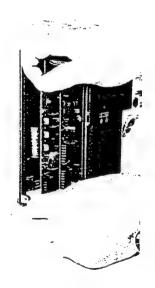


Fig. 2-30

2.8.2 Removing the MT-2 board

(1) Remove three screws 2.

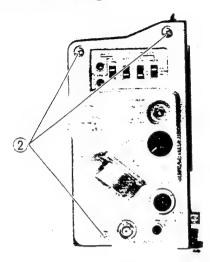


Fig. 2-31

(2) Remove the connector (2).

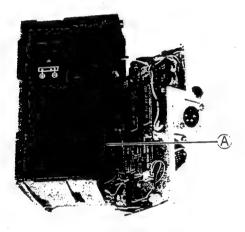


Fig. 2-32

(3) Remove two screws ③ .
Pull out the MT-2 board to access to the connectors.

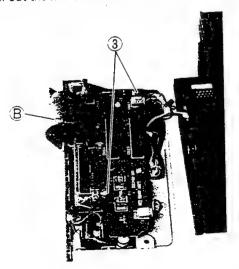


Fig. 2-33

(4) Refer to the FPC connector (B) removal below.

Note for conductors side on both of card cable and connector to mate.

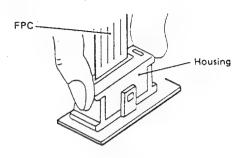


Fig. 2-34

2.8.3 Removing the CT board

- (1) Remove the MT-2 board as shown in Section 2.8.1 and 2.8.2.
- (2) Remove three screws 4.

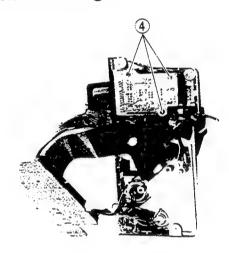
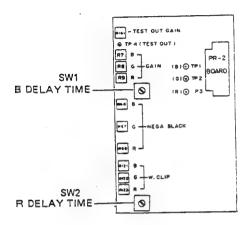


Fig. 2-35

2.9 FUNCTIONS OF SWITCHES INSIDE CAMERA

Each function of the switches built in the camera (on the PR2, SE, CP and MT boards) is as follows.

2.9.1 Switches on PR2 board



R/B DELAY TIME switches (SW1, SW2) SW1 and SW2 are adjusting switches for delay amount of R/B signal. Usually, adjustment by these switches is not required.

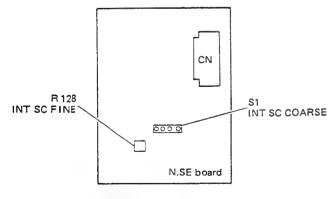
Don't touch these switches.

2. MATRIX ON/OFF switch connector (S3) S3 is the connector of the MATRIX ON/OFF switch. Ideal spectral composition includes respective negative components corresponding to R, G and B colors, however the practical spectroscopic system excludes negative components and such errors are compensated by the color matrix circuit which is activated by setting this

• Setting position at shipment: "ON"

switch to "ON".

2.9.2 Switch on SE board (NTSC type only)

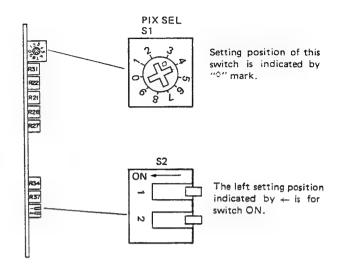


1. INT SC COARSE switch (S1)

The INT SC COARSE switch (S1) and the INT SC FINE volume control (R128) on the SE board (only in the NTSC type) are prepared to adjust SC signal generated by the built-in SSG. In usual, adjustment by S1 and R128 is not required.

Don't touch them.

2.9.3 Switches on CP board



1. PIX SEL switch (S1)

This is a selector switch of signals to be outputted to the TEST OUTPUT connector and to the viewfinder. According to the setting position of this switch, output signal is selected as follows.

Setting position	0	1	2	3	4-9
Output signal	R	G	В	ENC (composite)	None

• Setting position at shipment: "3"

2. CHECK switch/CC switch (S2-1, S2-2)

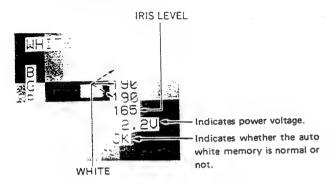
These switches are prepared for adjustments and check-up of the automatic operation (AUTO WHITE, AUTO BLACK, AUTO IRIS, etc.) with the CPU set to the check mode as well as for turning on/off the contour collector. According to setting positions of these switches, the mode is shifted as follows.

	Swi posi	tch tion		Mode	
	(upper) (lower)				
1	OFF	ON	Normal	Contour "ON"	
1	OFF	OFF	mode	Contour "OFF"	
2	ON	OFF	Check	for adjusting AUTO WHITE/IRIS	
3	ON	ON	mode	for adjusting AUTO BLACK	

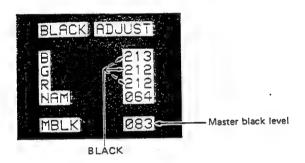
① Normal mode (Switch "1" is OFF)

By turning ON/OFF the switch "2", the contour collector can be turned on/off.

Q AUTO WHITE/AUTO IRIS adjusting/check mode Indication in the viewfinder is as shown below. In practical adjustment, refer to the Section 3 "Electrical Adjustment".



- * Respective values of B, G, R and NAM don't indicate voltage but are mere indexes for convenience.
- 3 AUTO BLACK adjusting/check mode Indication in the viewfinder is as follows. In practical adjustment, refer to the Section 3 "Electrical Adjustment".

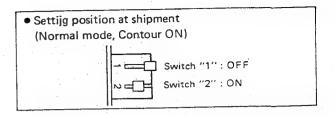


 Respective values don't indicate voltage but are mere indexes for convenience of the CPU.

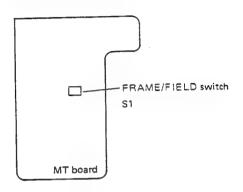
In the check mode, the camera comes in the following condition.

- 1) When the IRIS MODE switch of the lens is set to "AUTO", the iris is fixed (around f 5.6).
- AUTO SETUP and AUTO WHITE BALANCE adjustments are impossible.
- Display in the viewfinder is for the check mode, and it cannot be changed to another display by the DISP. SELECT switch.

If the switch "1" is once turned ON (to set to the check mode), contents of the auto white balance memory (AUTO 1, AUTO 2) are erased and the color temperature is initialized to the preset value even after the switch "1" is turned OFF (to set to the normal mode).



2.9.4 Switch on MT board



1. FRAME/FIELD READOUT SELECTOR switch (S1)

To select reading mode of signal from the CCD.

Position "1": For FRAME READOUT mode

Used to pick up still objects. In this mode the vertical resolution of the camera is

improved.

Position "2": For FIELD READOUT mode

Used to pickup moving pictures.

Setting position at shipment: Position "2"

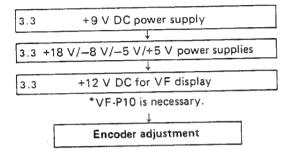
2.9.5 Function of switches built in adapter

For these switches, refer to the item 1 "Circuit Description" of the "Camera Adapter KA-20" to be described later.

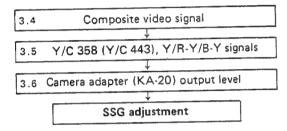
SECTION 3 ELECTRICAL ADJUSTMENT

3.1 FLOWCHART OF ELECTRICAL ADJUSTMENT

1. Adjustment and checkup of power supply



2. Encoder adjustment



3. Adjustment of SSG (Reference signal generator)

Note: This adjustment is not required generally.

Proceed to "Signal adjustment" of the next.

• NTSC

SC frequency (INT)	
+	
SC lock (EXT)	
+	
H. lock (EXT)	
ţ	
Burst timing (EXT)	
↓	_
Signal adjustment	
	SC lock (EXT) H. lock (EXT) U Burst timing (EXT)

· PAL

3.15P	SC frequency (INT)	
	1	
3.15P	fsc-25Hz lock (INT)	
	+	
3.15P	282 fH lock (INT)	
	+	
3.16P	SC lock (EXT)	
	+	
3.16P	Burst timing (EXT)	
	+	
	Signal adjustment	

4. Signal adjustment

	Optical Block replaced
	1
3.17 *	CCD driver
	÷
3.7	Static shading
	↓
3.8	Preset black/Black balance
	↓
3.9	In-gain
	1
3.10	Black
	<u> </u>
3.10	Gain/Gamma
	<u> </u>
3.10	Dynamic shading
	<u> </u>
3.10	Flare correction
	+
3.10	ABL
	*
3.11	Knee/White clip
	*
3.12	Negative signals
	<u> </u>
3.13	Auto iris
	+
3.13	Auto white
	<u> </u>
3.13	Auto black
	<u> </u>
3.13	Level indicator
	÷ .
3.14	Contour corrector

^{*}CCD DRIVER adjustment is um eccessary at ordinary servicing. (include opiical Block replacing)

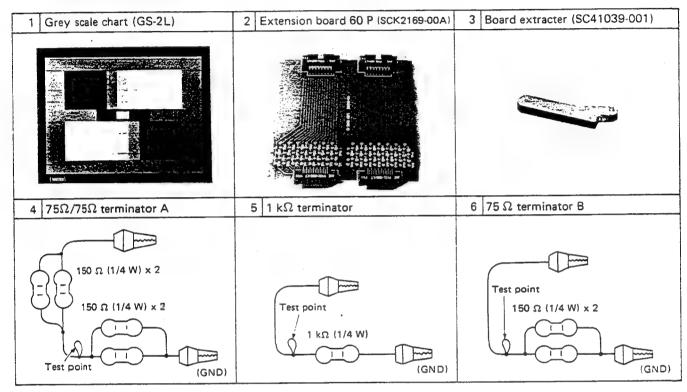
3.2 REQUIRED EQUIPMENT AND STANDARD SETUP FOR ELECTRICAL ADJUSTMENT

3.2.1 Necessary equipment and instruments

- 1. Lighting appliance (Halogen lamps 3 200 K)
- 2. DC voltmeter (digital voltmeter is preferable)
- 3. Oscilloscope (dual-trace type is preferable)
- 4. Frequency counter
- 5. Color video monitor

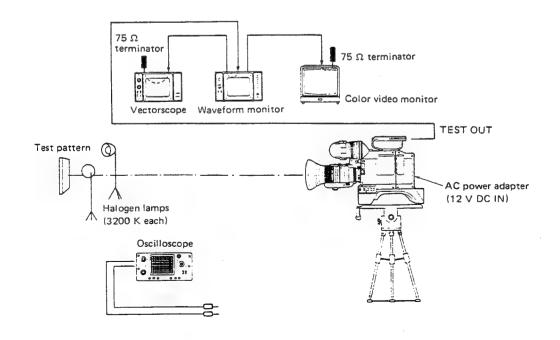
- 6. Waveform monitor
- 7. Vectorscope
- 8. Tripod base (KY-25 accessary or KA-500X)
- 9. Regulated power supply: 12 V_DC (AC power adapter, etc.)
- 10. Lens: HZ-516B or equivalent

3.2.2 Required divices and jigs



Note: Prepare the terminators (items 4, 5 and 6) by yourself.

3.2.3 Standard setup and connection



No.	Item	Measuring	Measuring point (\bigcirc) Adjustment parts (\bigcirc)	Adjustment procedure
		instruments	Adjustment level (☆)	

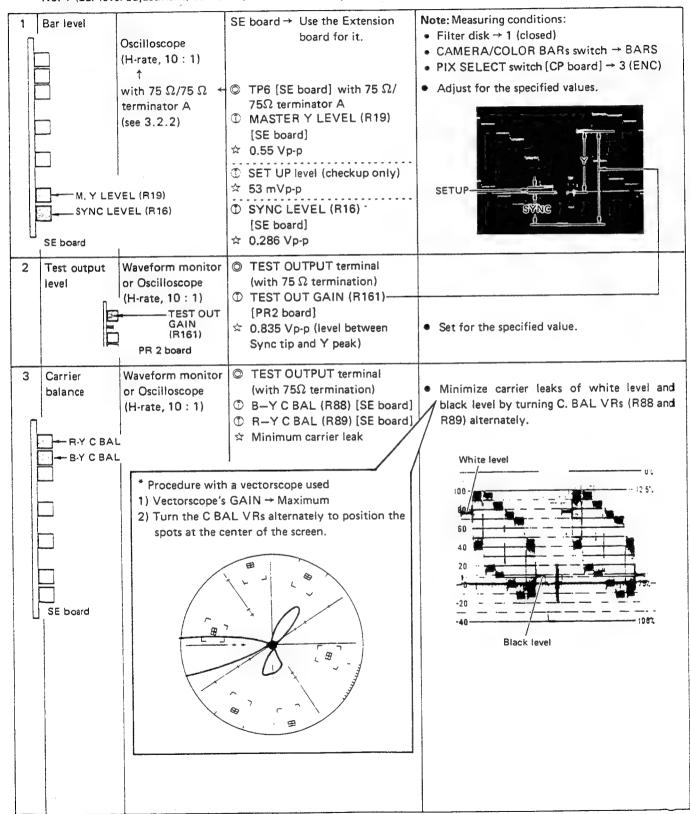
3.3 ADJUSTMENT OF POWER SUPPLY VOLTAGES

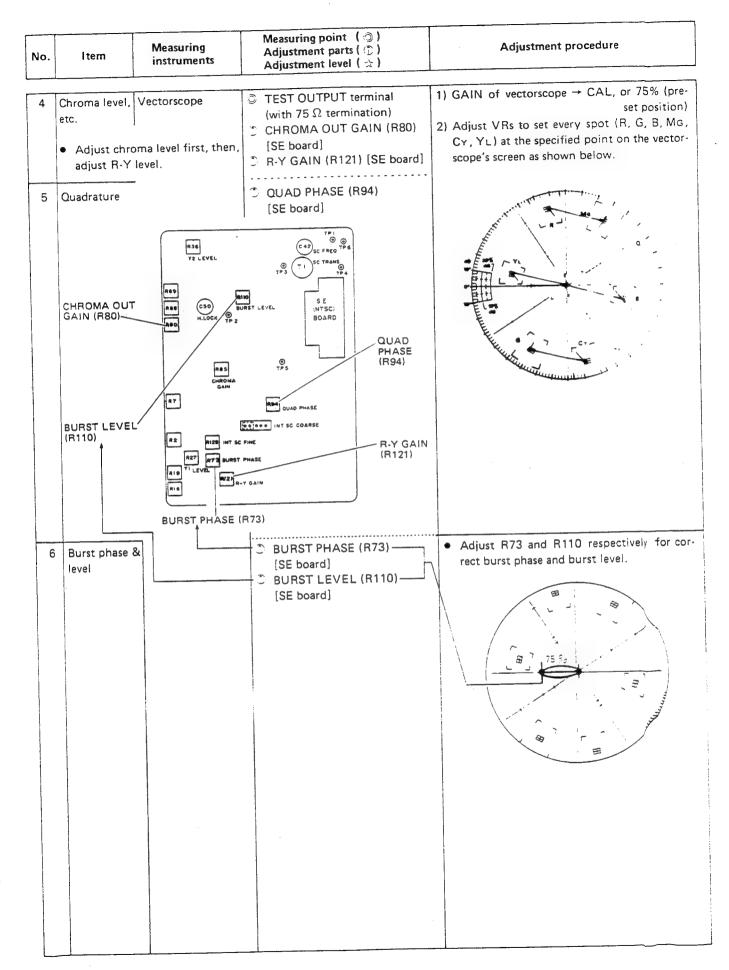
		LY VOLTAGES	
1 +9 V DC power supply 2 +18 V -8 V -5 V +5 V power supplies	Digital voltmeter	© C6 ⊕side) [PS board] © +9 ∨ ADJ (R6) [PS board] ⇒ +9 ∨ DC © AN16 pin 8 [MT board] ⇒ +18 ∨ DC © AN16 pin 9 [MT board] ⇒ -8.5 ∨ DC © AN16 pin 10 [MT board] ⇒ -5 ∨ DC © AN16 pin 11 [MT board]	Adjust R6 to obtain the specified voltage. Side
* This adjusts to the follo 1) Switch S2 mode to " The swit → 1: 0 → 2: 0 2) In the abo	ON (CHECK switch) DFF (CONTOUR swove mode, voltage is der the title of "WH below.	+5 V DC CP board → Extension board connected TP60 [Extension board] Viewfinder display 12 V DET (R37) [CP board] The 0.5 V up voltage more then TP60 voltage med according change the Standard setting of S2:	Note: Viewfinder VF-P10 is necessary for this adjustment. Confirm the voltage with a digital voltmeter. 1) Press the DISPLAY button to show the "STATUS 2" on the screen. DISPLAY button Voltage display 2) Adjust R37 so the 0.5 V up voltage as confirmed at TP60 is displayed on the screen

No.	l tem	Measuring instruments	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure	
-----	-------	-----------------------	---	----------------------	--

3.4-N ENCODER ADJUSTMENT - 1(Adjustment of composite signal): NTSC

Note: If this adjustment is performed without a vectorscope, proceed the adjustment and checkup of the items only from No. 1 (Bar level adjustment) to No. 3 (Carrier balance adjustment).

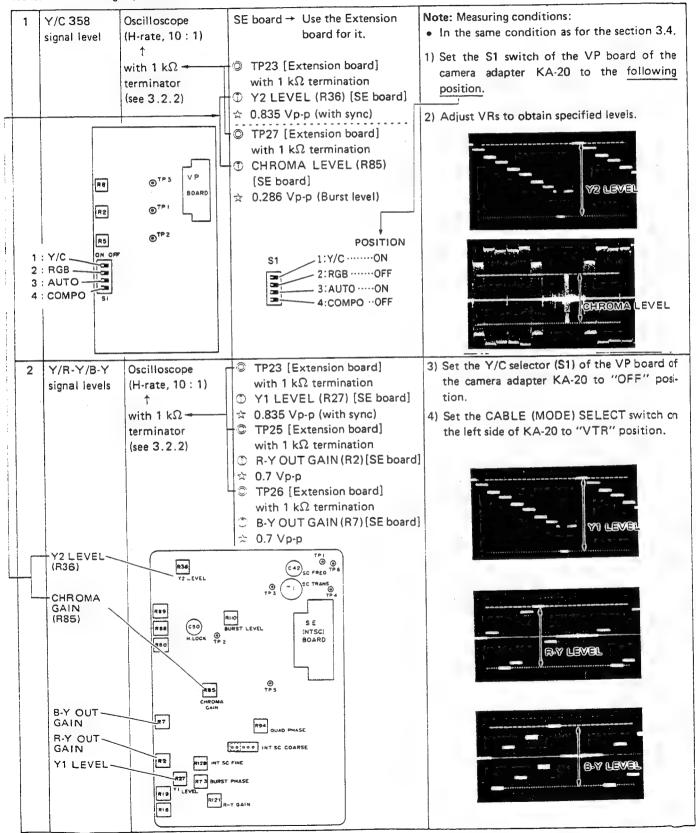




No.	ltem	Measuring	Measuring point (◎) Adjustment parts(①)	Adjustment procedure
140.	7.011	instruments	Adjustment level (☆)	

3.5-N ENCODER ADJUSTMENT - 2 (Adjustment of Y/C 358 and Y/R-Y/B-Y signal levels) : NTSC

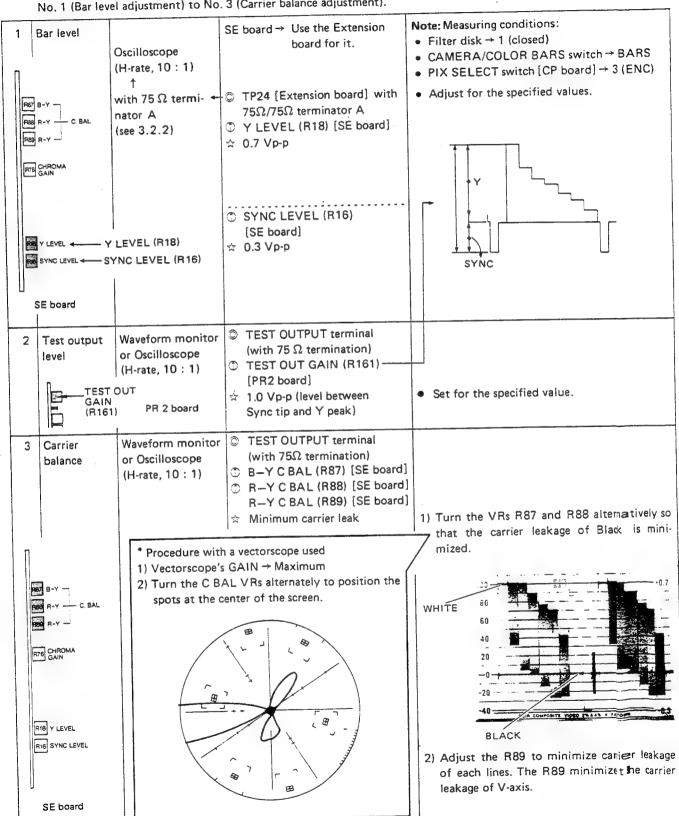
Note: The following adjustment should be performed successively after the procedure of 3.4 Encoder Adjustment - 1.



		Measuring	Measuring point (◎)	
N	. Item	instruments &	Adjustment parts (①)	Adjustment procedure
100	, item	Input signals	Adjustment level (🖈)	

3.4-P ENCODER ADJUSTMENT - 1 (Adjustment of composite signal) : PAL

Note: If this adjustment is performed without a vectorscope, proceed the adjustment and checkup of the items only from No. 1 (Bar level adjustment) to No. 3 (Carrier balance adjustment).

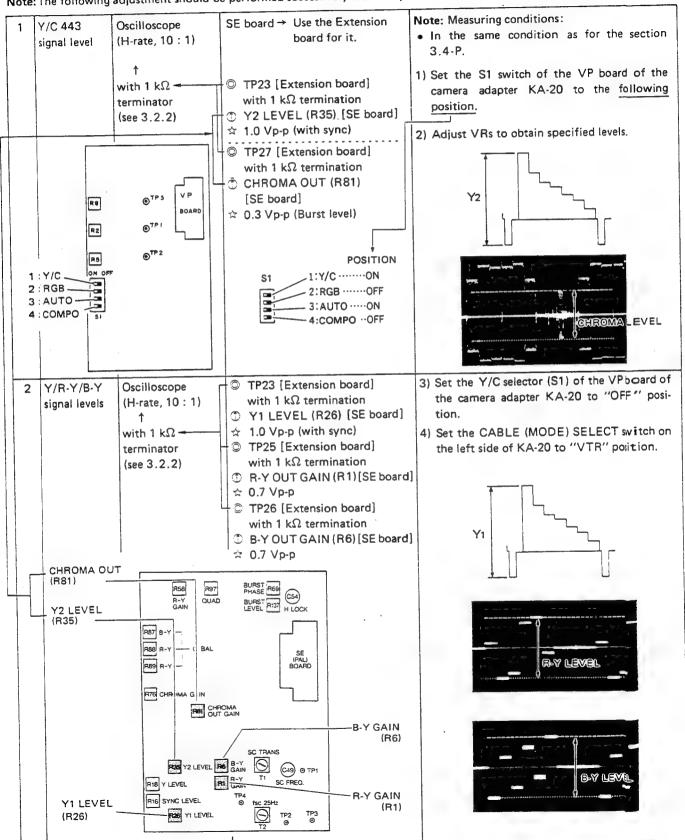


No. Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
4 Chroma leve etc. • Adjust chadjust R-	roma level first, then,	© TEST OUTPUT terminal (with 75 Ω termination) ① CHROMA GAIN (R76) [SE board] ① R-Y GAIN (R58) [SE board]	 GAIN of vectorscope → CAL, or 75% (preset position) Adjust VRs to set every spot (R, G, B, MG, CY, YL) at the specified point on the vector-scope's screen as shown below.
5 Quadrature		① QUAD (R97) [SE board]	A TANAMA
CHROMA (R76	R3S Y2 LEVEL R6	BURST CSA)	
6 Burst phase level	RIG SYNC LEVEL R26 Y1 LEVEL	BURST PHASE (R69) [SE board] (SE board] (SE board]	Adjust R69 and R137 respectively for correct burst phase and burst level. LEVEL PHASE- PHASE-

No. Item Measuring point (◎) Adjustment parts (①) Adjustment level (☆) Measuring point (◎) Adjustment parts (①)	ent procedure
--	---------------

3.5-P ENCODER ADJUSTMENT - 2 (Adjustment of Y/C 443 and Y/R-Y/B-Y signal levels) : PAL

Note: The following adjustment should be performed successively after the procedure of 3.4-P Encoder Adjustment -1.



Measuring Measuring point (◎) No. Item instruments & Adjustment parts (①) Input signals Adjustment level (☆)	Adjustment procedure
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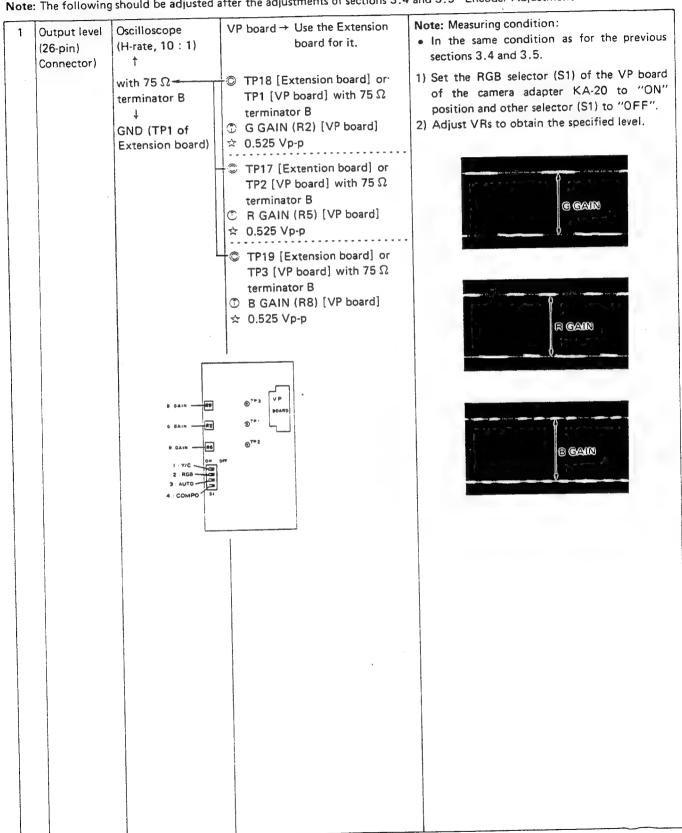
3.6-P ADJUATMENT OF CAMERA ADAPTER OUTPUT LEVEL

• Refer to "3.6 ADJUSTMENT OF CAMERA ADAPTER (KA-20) OUTPUT LEVEL" of page 3-7-N.

N	o. Item	Measuring instruments	Measuring point (◎) Adjustment parts(①) Adjustment level (☆)	Adjustment procedure

3.6-N ADJUSTMENT OF CAMERA ADAPTER (KA-20) OUTPUT LEVEL

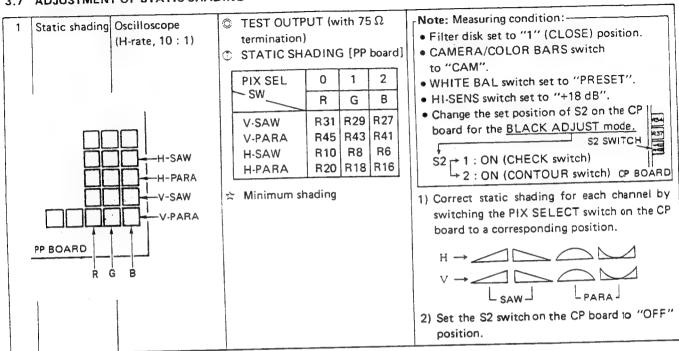
Note: The following should be adjusted after the adjustments of sections 3.4 and 3.5 "Encoder Adjustment - 1 & 2".



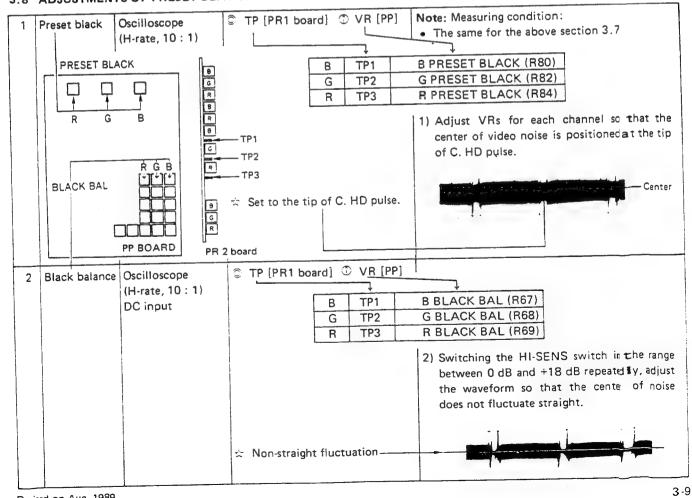
No. Item	Measuring instruments & Input signals	Measuring point (Adjustment procedure
	Oscilloscope (H-rate, 10 : 1) ↑ with 75 Ω ← terminator B ↓ GND (TP1 of Extension board)	TP17 [Extention board] or TP2 [VP board [with 75 Ω terminator B ⊕ R-Y GAIN (R26) [VP board] ⇔ 0.486 Vp-p (NTSC) 0.525 Vp-p (PAL) TP19 [Extension board] or TP3 [VP board [with 75 Ω terminator B ⊕ B-Y GAIN (R24) [VP board] ⇔ 0.486 Vp-p (NTSC) 0.525 Vp-p (PAL)	3) Set the COMPO selector (S1) of the VP board of the camera adapter KA-20 to "ON" position and other selector (S1) to "OFF". 4) Adjust VRs to obtain the specified level. 5) Set the selectors (S1) on the VP board as follows (initial set positions): • Y/C selector OFF • RGB selector OFF • AUTO selector OFF • COMPO selector OFF

No.	Item	Measuring instruments	Measuring point (◎) Adjustment parts(①) Adjustment level (☆)	Adjustment procedure

3.7 ADJUSTMENT OF STATIC SHADING

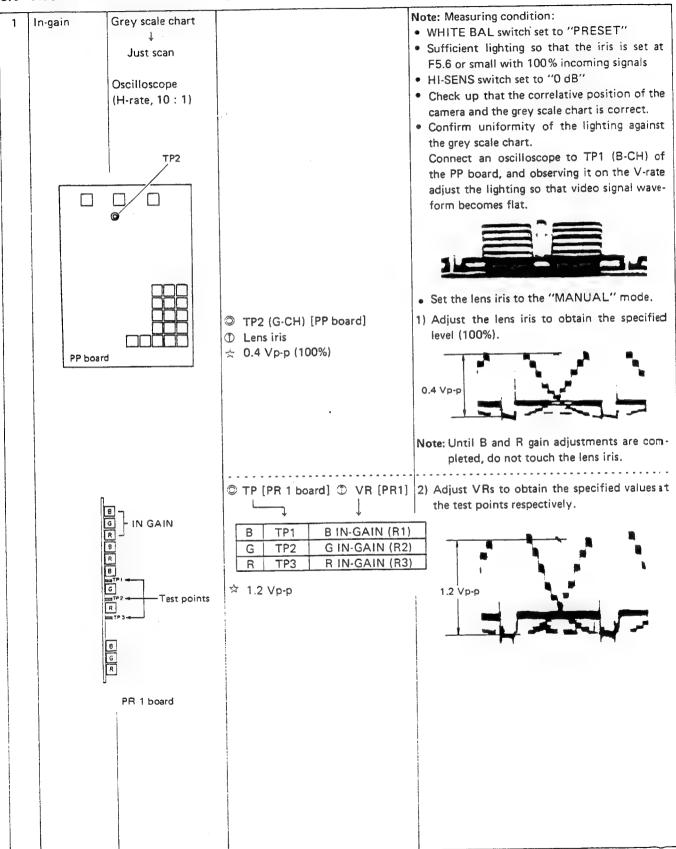


3.8 ADJUSTMENTS OF PRESET BLACK AND BLACK BALANCE



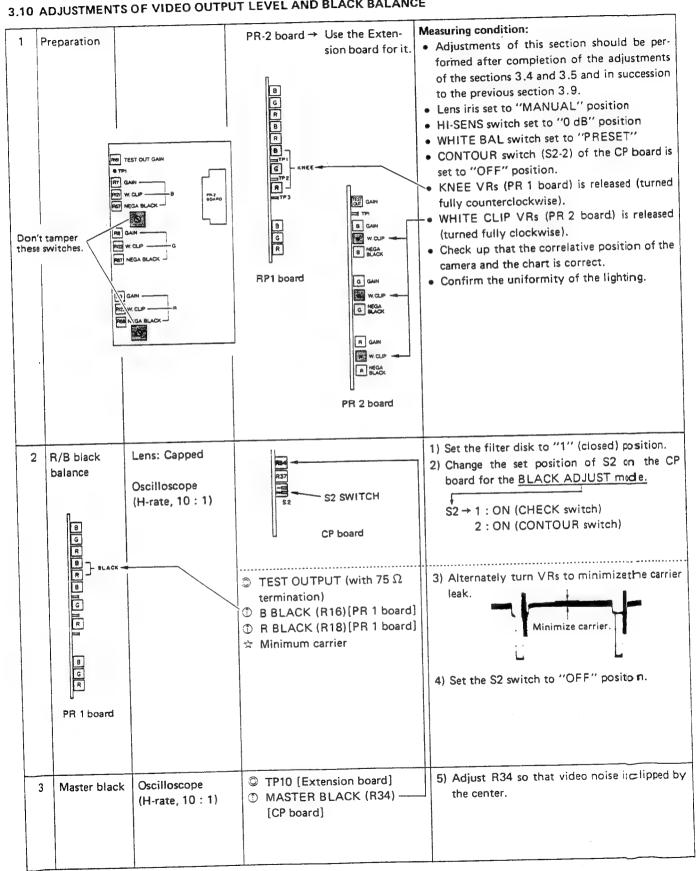
No.	Item	Measuring instruments	Measuring point (◎) Adjustment parts (③) Adjustment level (☆)	Adjustment procedure
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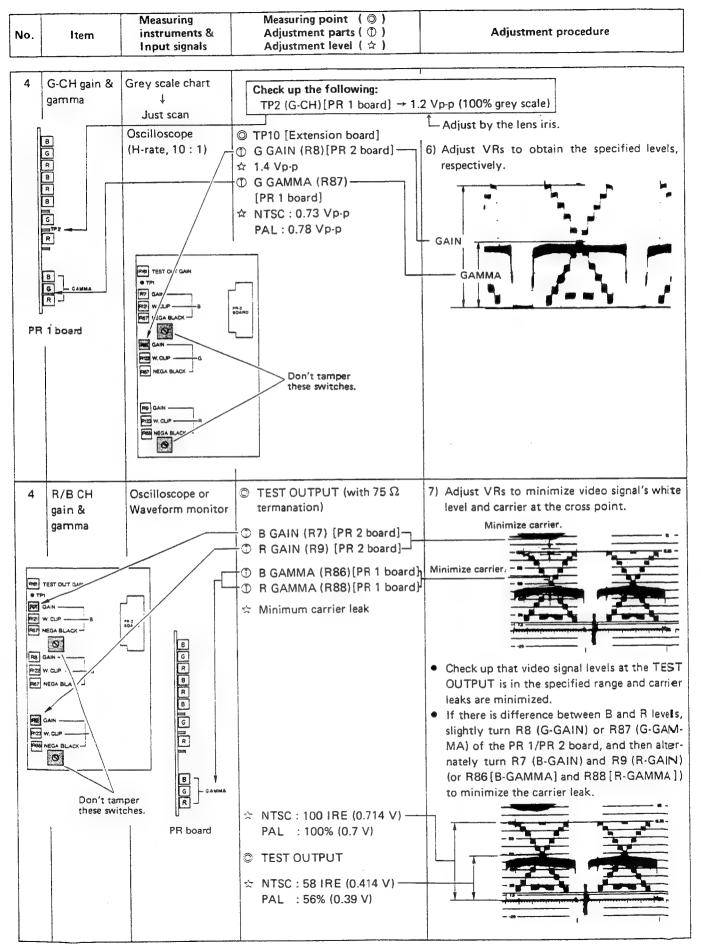
3.9 ADJUSTMENT OF IN-GAIN (Setting of input signals)

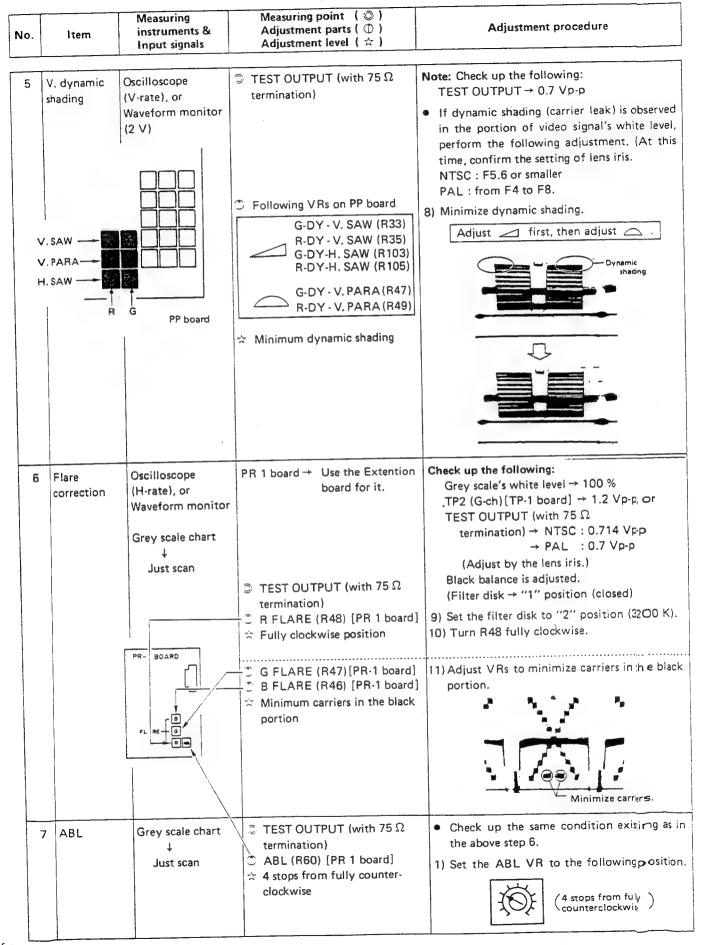


No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure

3.10 ADJUSTMENTS OF VIDEO OUTPUT LEVEL AND BLACK BALANCE

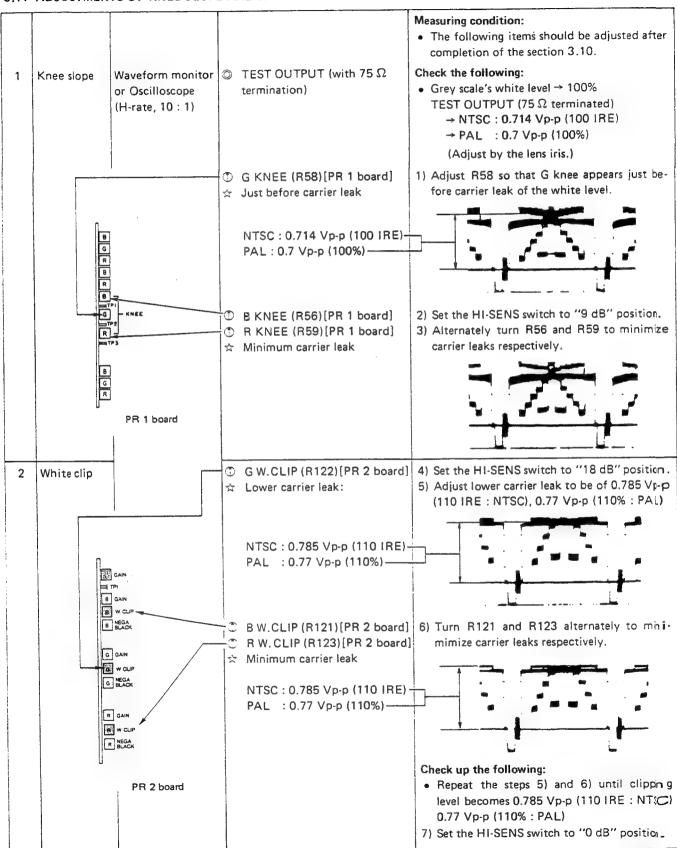






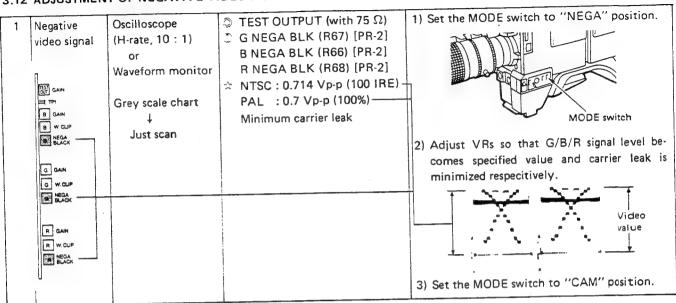
		Measuring	Measuring point (◎)	
No.	Item	instruments &	Adjustment parts (①)	Adjustment procedure
		Input signals	Adjustment level (🌣)	

3.11 ADJUSTMENTS OF KNEE SLOPE AND WHITE CLIP



No. Item Measuring point (◎) Adjustment parts (①) Adjustment level (☆) Measuring point (◎) Adjustment procedure		
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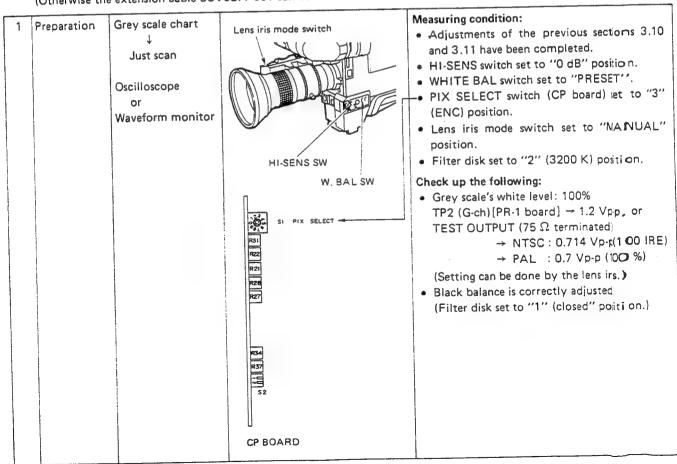
3,12 ADJUSTMENT OF NEGATIVE VIDEO SIGNALS

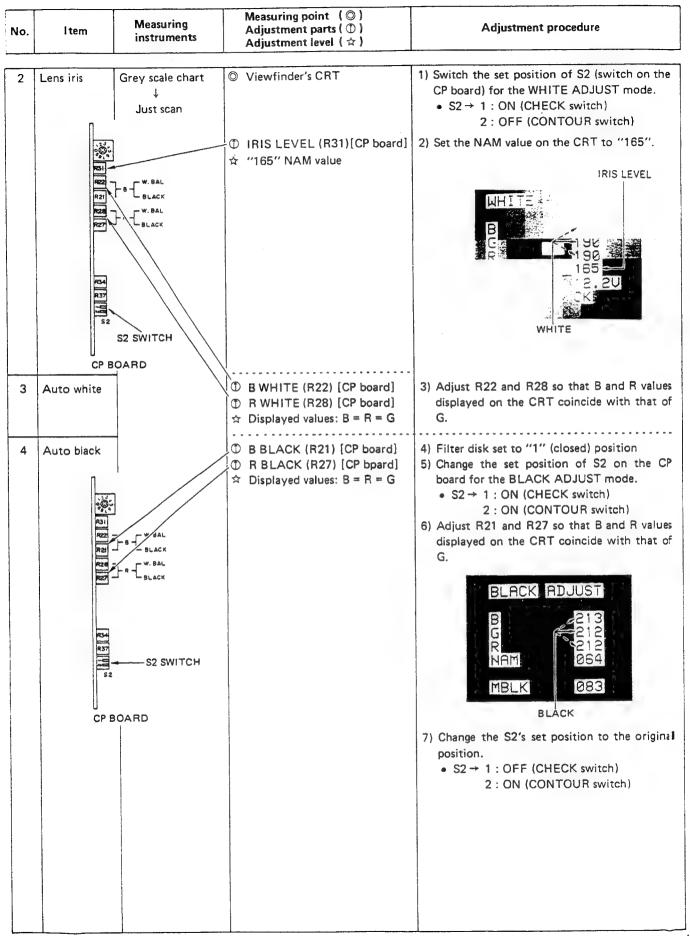


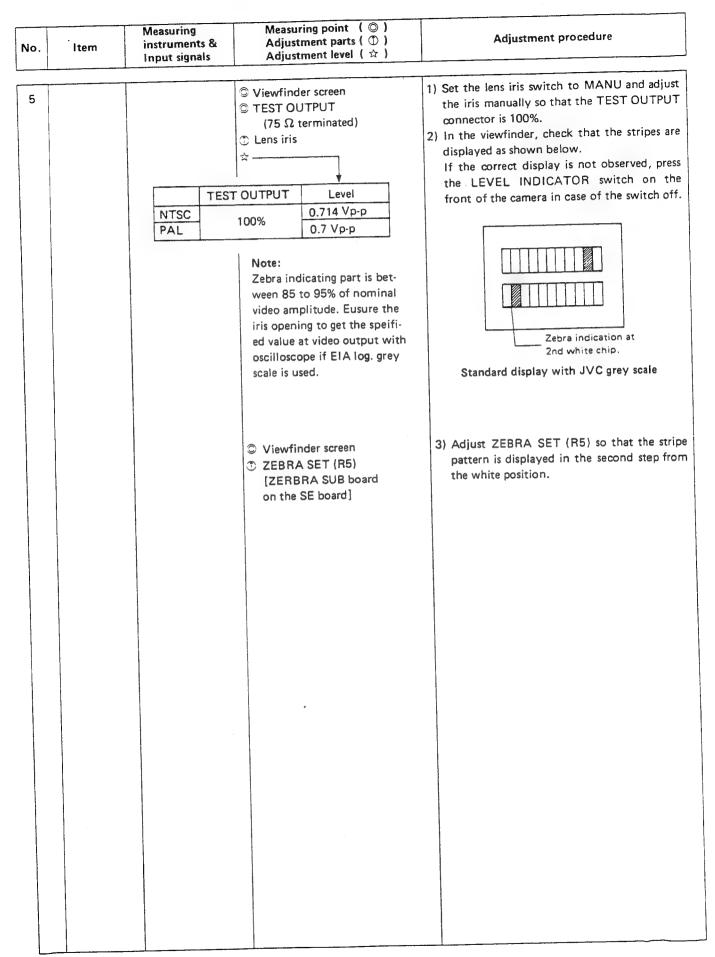
3.13 ADJUSTMENT OF AUTOMATIC CONTROL CIRCUITS (AUTO IRIS, AUTO WHITE, AUTO BLACK, LEVEL INDICATOR)

Note: For this adjustment, an electronic viewfinder (VF-P10, VF-P400, etc.) is needed.

(Otherwise the extension cable SCV0277-001 can be used in combination with a B/W monitor connected.)

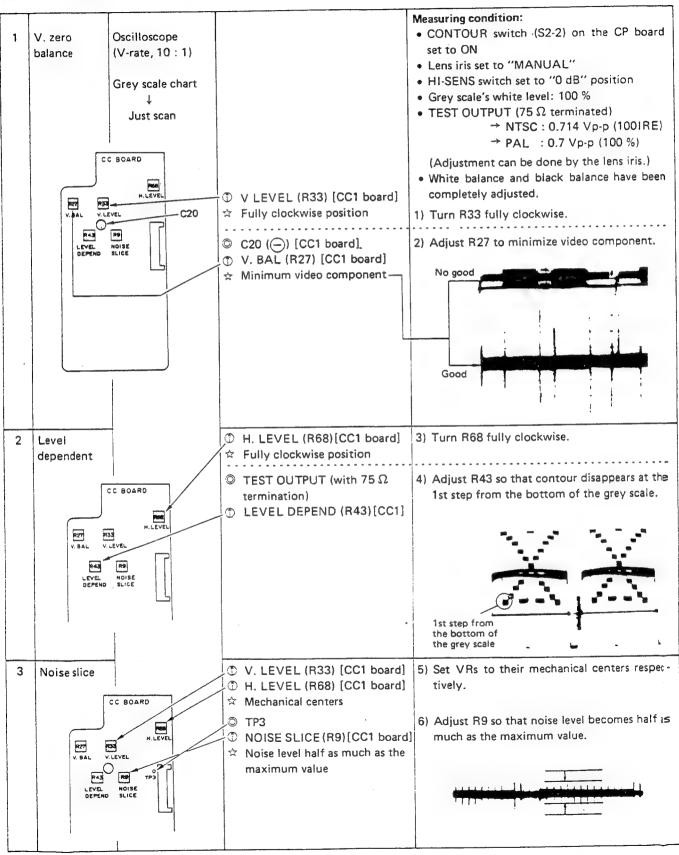


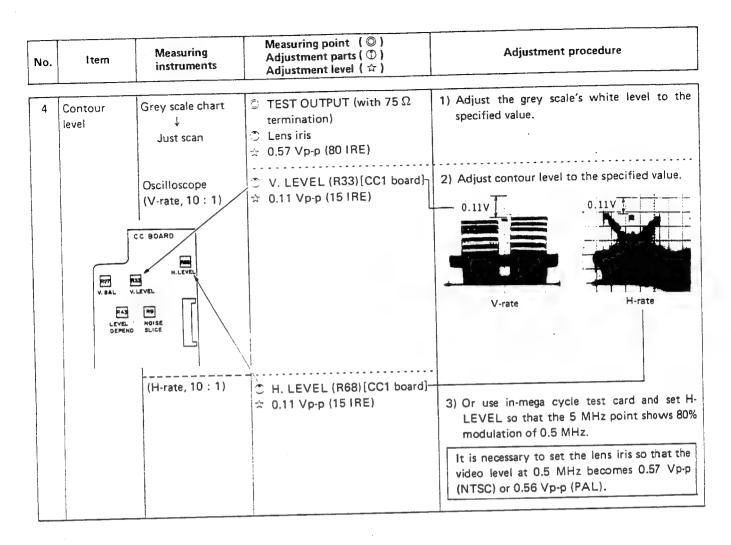




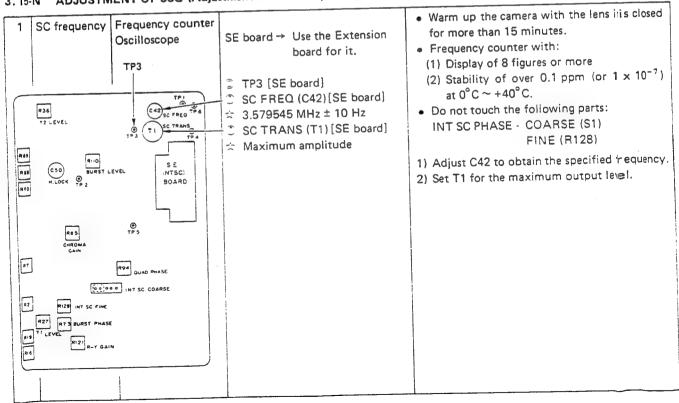
No.	Item	Measuring instruments	Measuring point (◎) Adjustment parts(①) Adjustment level (☆)	Adjustment procedure

3.14 ADJUSTMENT OF CONTOUR CORRECTOR





3.15-N ADJUSTMENT OF SSG (Adjustment of internal sync. signal) : NTSC

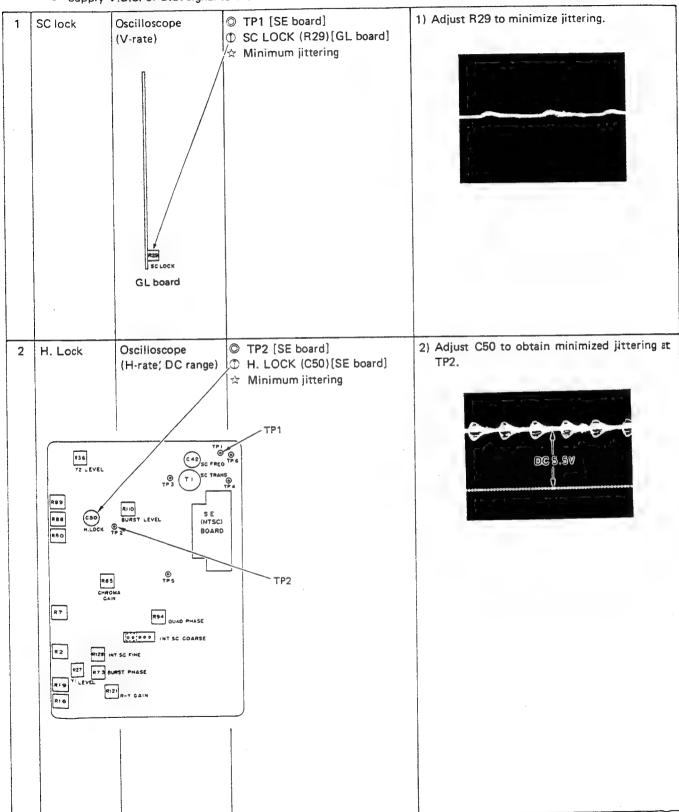


No.	Item	Measuring instruments	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
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3.16-N ADJUSTMENT OF SSG (Adjustment of external gen-locking) : NTSC

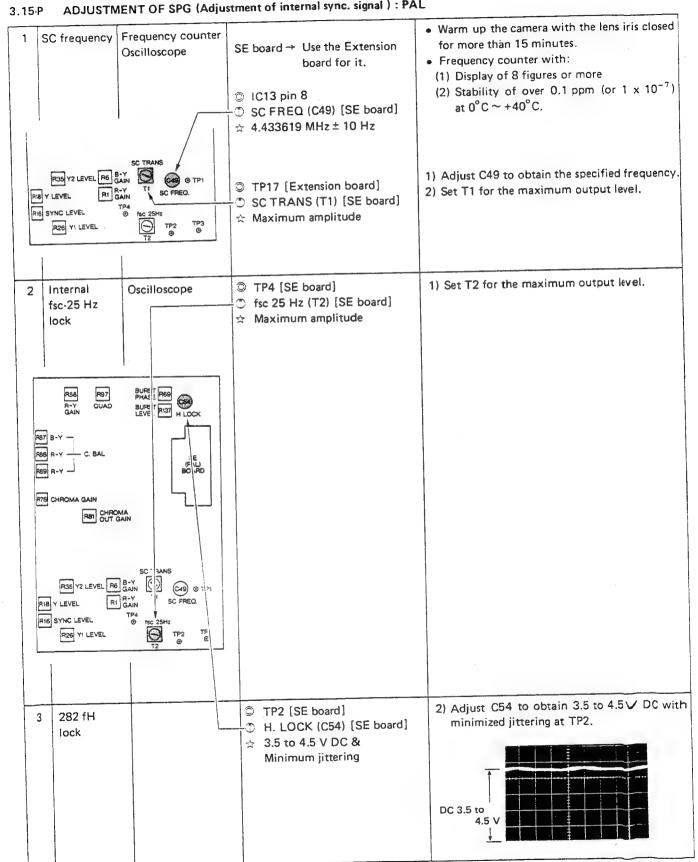
Notes: • This adjustment should be performed after the adjustment of the previous section 3.15 was completed.

Supply V.B.S. or B.B. signal to the GENLOCK INPUT terminal of the camera adapter on the rear.



No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure

ADJUSTMENT OF SPG (Adjustment of internal sync. signal): PAL



No.	Item	Measuring instruments	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure	
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3.16-P ADJUSTMENT OF SPG (Adjustment of external gen-locking) : PAL

Note: • This adjustment should be performed after the adjustment of the previous section 3.15-P was completed.

Supply V.B.S. or B.B. signal to the GENLOCK INPUT terminal of the camera adapter on the rear.

1	SC lock	Oscilliscope (V-rate)	GL board → Use the Extension board for it © TP24 [Extension board] ③ SC LOCK (R29) [GL board] ☆ Minimum jittering	1) Adjust R29 to minimize jittering.
2	Burst Timing	Oscilloscope: (H-rate)	GL board Use the extersion board for it. TP-29 [Extension board] (EXT VIDEO IN) IC7-8pin side [GL] (BFP) Burst timing [GL] R24 Set the center of BF timing—to the center of Burst signal.	1) Connect to oscilloscope A-ch. 2) Connect to oscilloscope B-ch. EXT VIDEO BF

No.	ltem	Measuring instruments	Measuring point (◎) Adjustment parts (①) Adjustment level (☆)	Adjustment procedure
3	Burst Timing	Oscilloscope: (H-rate)	GL board Use the extersion board for it. TP-29 [Extension board] (EXT VIDEO IN) R36 (IC7-8pin side) [GL] (BFP) Burst timing [GL] R24 Set the BF timing to the Burst-stert position.	1) Connect to oscilloscope A-ch. 2) Connect to oscilloscope B-ch. EXT VIDEO BF

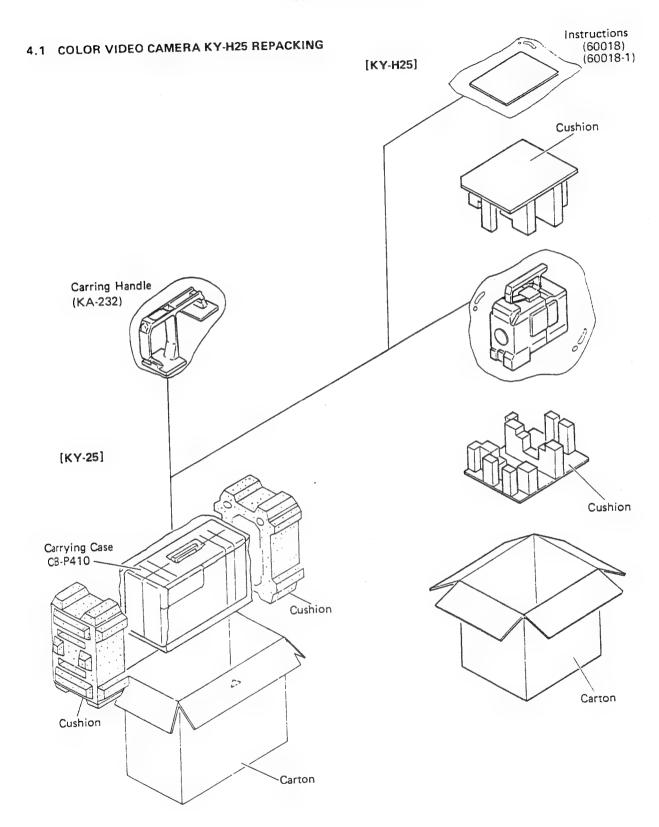
		Measuring	Measuring point (◎)	
No.	ltem	instruments &	Adjustment parts (①)	Adjustment procedure
		Input signals	Adjustment level (☆)	

3.17 CCD DRIVER ADJUSTMENT

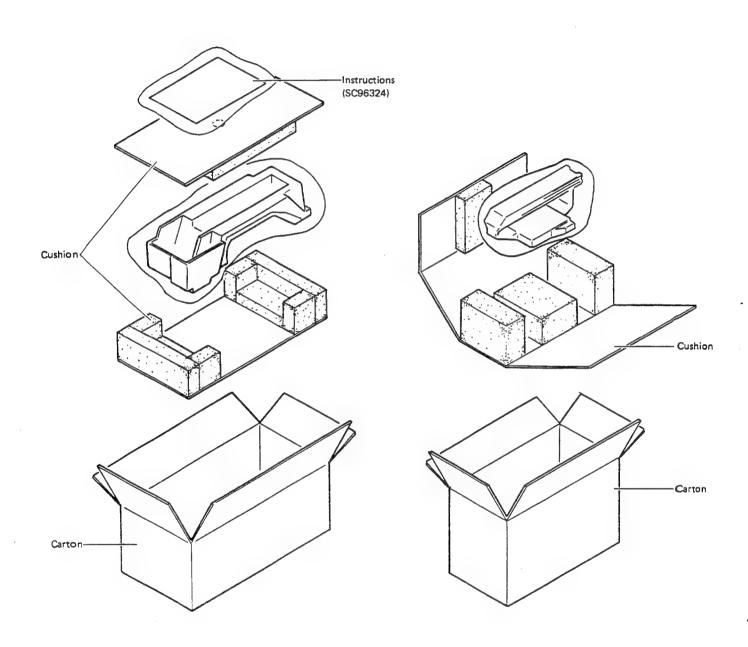
NOTE: This adjustment is unneccessary at ordinary servicing. (Include optical Block replacement)
This is reference.

			_	
1	SAMPLE TIMING	Oscilloscope (H-rate, 10 : 1)	 □ TEST output terminal (with 75 Ω termination) □ SAMPLE TIMING (R6) [DR-1 board] ☆ Mechanical center position 	• Filter disck set to "1" (CLOSE) position. 1) Adjust R6 to mechanical center position. PR6 DR1 R8 R8 R8 R8 R8 R8 R8 R8 R8
2	VH bias	Digital Voltmeter	 ○ TP1 [DR-2 board] ○ VH (R8) [DR-2 board] ☆ +15 V ± 0.3 V 	Set the SHUTTER button to "NORMAL" (1/60) mode. 1) Adjust R8 to obtain the sepcified voltage.
3	VH(S) bias	Digital Voltmeter	© TP1 [DR-2 board] ① VH(S) (R25) [DR-2 board] ☆ +14.9 V ± 0.3 V	 Set the SHUTTER button to "250", "500". or "1000" modes. 1) Adjust R25 to obtain the specified voltage.
4	V sub bias (blueming)	G TP2 G V	© TP [PP board] ① VR [DR board] ☆ Clip level SUB (R16) 1 Vp-p SUB (R20) 1.2 Vp-p SUB (R12) 1.2 Vp-p	 Filter disk set to "2" (3200 K) position. Shoot the Grey scale chart. Sufficient lighting so that the iris is set at F5.6 or small with 100% incoming signals. Set the lens iris to "MANUAL" mode. 1) Set the lens iris to "open". 2) Set each VRs so that video level is cliped at specified value.
5	VL		⊕ VL (R7) [DR-2 board]	1) Set the R7 to mechanical center position.

SECTION 4 REPACKING

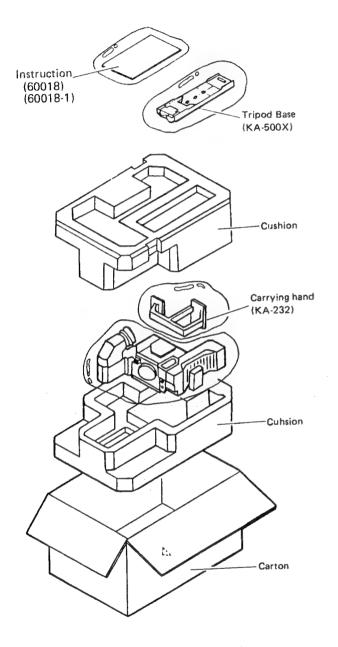


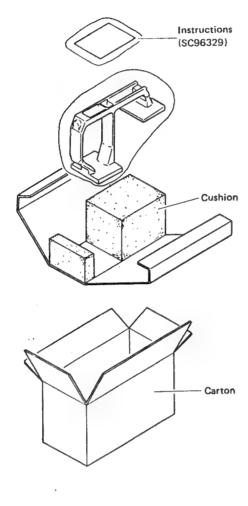
4.2 SHOULDER PAD KA-220 REPACKING



4.4 COLOR VIDEO CAMERA KY-R25 REPACKING

4.5 CARRYING HANDLE KA-232 REPACKING





SECTION 5 EXPLODED VIEW AND PARTS LIST

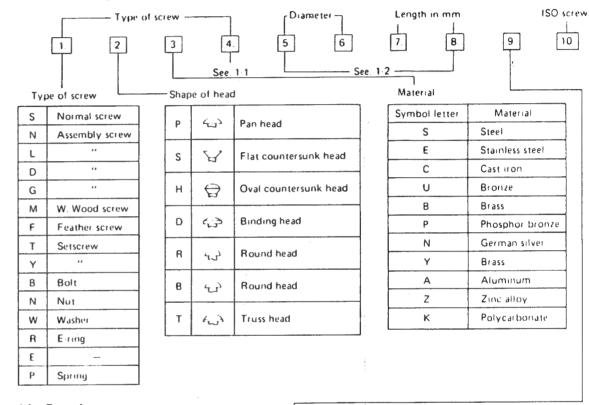
Note: Replacing marked \triangle parts, be sure to use parts specified for safety purposes.

In this exploded views the part number of the screws and washers designate the type and dimensions of those items.

The following examples will help you to decipher them.

5.1 STANDARD PART NUMBER CODING

5.1.1 Screw coding

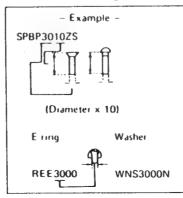


Surface treatment

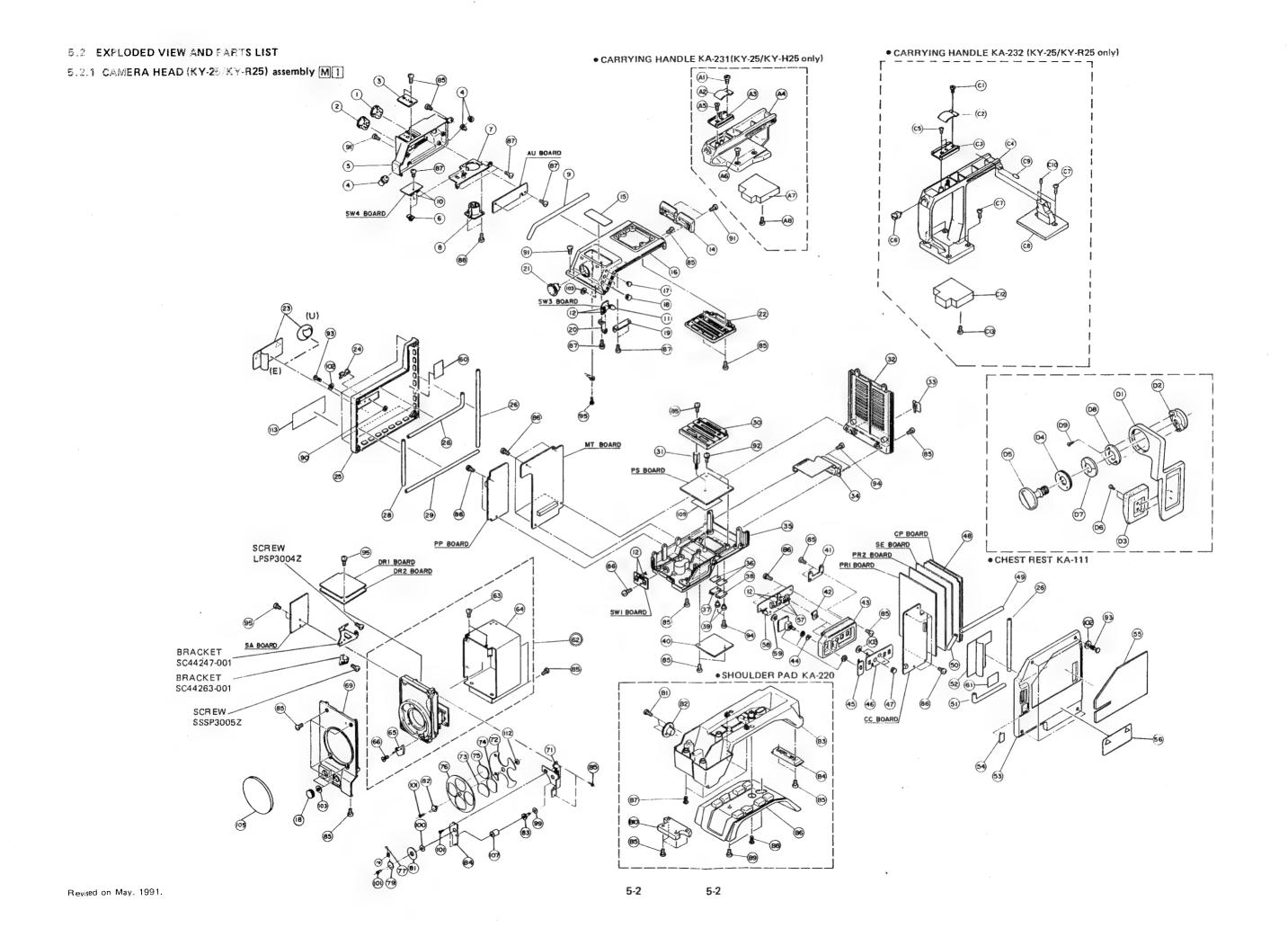
1-1 Type of screw

Р	Cross Recessed head screw
Α	Tapping screw
В	Tapping screw
T	Tapping screw
E	Tapping screw

1-2 Diameter and Length of screw



Symbol letter	Surface treatment
Z	Galvanization, dichromic acid treatment (MFZn2 C)
N	Nickel plating (MFNi2, MFNi1)
R	Chrome plating (MBCr2, MBCr1)
G	Silver plating (SP4)
w	Nichrome platings
Р	Phosphite treatment
В	Bronze plating
М	Black coloring after galvanization
Α	Red coloring after galvanization
С	Blue coloring after galvanization
Т	Green coloring after galvanization
V	Violet coloring after galvanization
F	Iron with black coloring



- CAMERA HEAD (KY-H25) assembly parts list -

MII 1	MM	_	

Part No.	Part Name	Description
SCV0238-06S	Connector	MIC (6 P) J8
		LENS J1
	Shoe	
	BNC Connector	Nut included
SC20332-002	Connector Cover	
SC43431-011	Knob	
SC31033-001	Bracket	
SCV0316-03S	XLR-3 Connector	MIC (3 P)
SC43398-004	Rubber	AND THE PROPERTY OF THE PROPER
SCV0255-001	Slide Switch	S8 (AUX ON/OFF), S9 (STEREO ↔ MONO)
TLR102A	LED	LD 2 (SHUTTER)
SCV1639-001	Push Switch	S3 (DISP SELECT), S6 (VTR), S7 (AUTO SET), S10 (SHUTTER ON/OFF), S11 (SHUTTER MODE),
		S12 (ZEBRA)
-	Bass	
	1	
SC43407-001	Bracket	
		VF
	•	
		U version
		E version
i		PGD30011-1
SC20314-021	L. Side Cover	
SC43398-007	Rubber –	
SC43398-002	Rubber	
SC43398-006	Rubber	
SC30989-001	Lower Rail	
SC43651-001	Stud	
SC20309-001	Rear Frame	
SC41957-012		U version
SCV1277-003		
SC10070-001	Bottom Frame	
SCV1388-001	Mica Sheat	,
TA78005AP	IC	
	•	
		S1 (OPERATE)
	•	
-	-	
SC43398-002	Rubber	
SC43398-003	Rubber	_
	Rubber	•
1 SC43398-008		liver is
SC43398-008 SC43659-011	Label	VR Location
SC43659-011	Label R. Side Cover	VR Location
		VR Location Filter disc
	SCV0238-06S SCV0238-08S SC30374-041 PU48567-001 SC20332-002 SC43431-011 SC31033-001 SCV0316-03S SC43398-004 SCV0255-001 TLR102A SCV1639-001 TLR102A SCV1639-001 SC30988-012 Not Available SC20307-002 SC43451-001 SC43528-001 SC43528-001 SC43528-001 SC43528-001 SC43528-001 SC43528-001 SC43948-001 PU54392-1 Not Available SC20314-021 SC43398-002 SC43398-007 SC43398-001 SC43651-001	SCV0238-06S SCV0238-08S SCV0238-08S SC30374-041 PU48567-001 SC20332-002 SC43431-011 SC31033-001 SCV0316-03S SC43398-004 SCV0255-001 SIde Switch TLR102A SCV1639-001 SC20307-002 SC43451-001 SC43406-001 SC43528-001 SC4328-001 SC43407-001 SC30988-002 SC43948-001 PU54392-1 Not Available SC20314-021 SC43398-002 SC43398-002 SC43398-001 SC43398-002 SC43398-001 SC43398-002 SC43398-001 SC43398-001 SC43398-002 SC43398-001 SC43398-001 SC43398-002 SC43398-001 SC43398-001 SC43398-002 SC43398-001 SC43398-001 SC43398-001 SC43398-002 SC43398-001 SC43398-001 SC43398-001 SC43398-001 SC43651-001 SC43661 SC43601 SC

Symbol No.	Part No.	Part Name	Description
56	SC43658-001	Label	U version
	PU54392-1	Label	E version
57	SCV0389-011	Slide Switch	S2 (HI-SENS), S4 (BARS), S5 (W. BAL)
58	SLB-26UR5	LED	LD 1 (POWER)
59	SC43656-085	Spacer	Lup .
60	SC43654-002	Label	VR Location
61	SC41702-006	Sheet	
62	SCM0466-N0A	Optical Block Ass'y	(6), (6), (6), (1), (1) included (for U version)
	SCM0466-P0A	Optical Block Ass'y	63, 64, 65, 66, (14) included (for E version)
63	_	-	
64	SC31231-001	Shield Cover	
65	SC40794-001	Lever	
66	SSSP2604M	Screw	M2.6 × 4
67	_	_	
68	SC44247-001	Bracket	
69	SC20308-002	Front Frame	,
70		-	
71	SC30997-011	Filter Base	
72	SC43232-002	Filter Sheet	
73	SC43229-001	Filter	(1) 3200 K
74	SC43230-001	Filter	(2) 5600 K
75	SC43231-001	Filter	(3) 5600 K + 25% ND
76	SC30998-001	Filter Wheel	
77	SC40465-024	Steal Ball	
78	SC42441-001	Spring	
79	SC43875-001	Shaft	
80	-	E Ring —	
81	SC31151-001	Knob	
82	SC43422-001	Shaft	
83	SC43227-011	Gear	
84	SC43233-011	Filter Cover	
85	SDSP3006M	Screw	M3 × 6
86	LPSP3006Z	Screw	M3 × 6
87	SDSP3004N	Screw	M3 × 4
88	SPSP2606N	Screw	M2.6 × 6
89	_	_	
90	SC44178-018	Spring Nut	
91	SDSP3008M	Screw	M3 × 8
92	LPSP3006Z	Screw	M3 × 6
93	SC43397-002	Screw	
94	SDSP2606M	Screw	M2.6 × 6
95	LPSP3004Z	Screw	M3 x 4
96	LPSP2604Z	Screw	M2.6 × 6
97	_	_	
98	_	_	
99	Q03093-826	Washer	
100	SC43979-001	Spacer	:
101	SPSK2050M	Screw	M2 × 5
102	Q03093-825	Washer	·
103	SC43650-011	Sheet	
104	_	_	
105	SC43825-002	Mount Cap	
106	_	_	
107	SC43199-002	Bearing	
108	_	_	
109	SC43974-001	Sheet	
110			
111	_	-	
117	Q03093-841	Washer	1
112 113	SC44177-021	Label	Caution Label

- CARRYING HANDLE (KA-031) assembly parts list -

Symbol No.	Part No.	Part Name	Description
Α1	C40970	Screw	
A2	C40936	Spring	
A3	SC40886-001	Guide	
Α4	SC20316-021	Handle	
A5	SSSP3006N	Screw	M3 x 6
A6	SC43390-001	Screw	
Α7	SC44083-011	Cover	
8A	SDSP3004N	Screw	

- SHOULDER PAD (KA-220) assembly parts list -

Symbol No.	Part No.	Part Name	Description
B1	SSSP3006M	Screw	M3 × 6
B2	SC40928-001	Lock Ring	
В3	SC10067-002	Bottom Frame	
B4	SC43394-001	Rear Base	
B5	BYS3010M	Screw	M3 x 10
B6	SC20333-003	Shoulder Pad	
В7	SC43390-001	Screw	
B8	SC43390-002	Screw	
В9	SDSP4008R	Screw	M4 × 8
B10	SC43393-001	Front Base	

- CARRYING HANDLE (KA-232) assembly part list -

Symbol No.	Part No.	Part Name	Description
C1	C40970	Screw	
C2	C40936	Spring	
C3	SC40886-001	Guide	
C4	SC20340-011	Handle	
C5	SSSP3006N	Screw	M3 x 6
C6	PU53202	Hook Holder	
C7	SC43390-001	Screw	
C8	SC31061-001	Handle Base	
C9	SC43532-001	Pin	
C10	YCS3004M	Screw	M3 x 4
C11	_	_	
C12	SC44083-011	Cover	
C13	SDSP3004N	Screw	

- CHEST REST (KA-111) assembly part list -

		• •	
Symbol No.	Part No.	Part Name	Description
D1	SC20114-001	Pad Arm	
D2	SC40967-002	Gear	
D3	SC30387-002	Cushion	
D4	SC40973-001	Adjust Plate	
D5	SC40975-002	Lock Knob	
D6	SDSP3006M	Screw	M3 x 6
D7	SC40974-001	Spring Washer	
D8	SC40970-001	Lock Plate	j .
D9	SSSP3006N	Screw	M3 x 6

SECTION 6 CHARTS AND DIAGRAMS

SCHEMATIC DIAGRAM NOTES

• Schematic safety precaution

Parts are safety related aprts.

When replacing them, be sure to use the specified parts.

Voltage and waveform measurements.

Voltage: Measured with digital voltmeter in DC range;

FETs

iris closed.

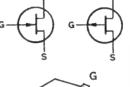
Waveform: Grey scale illuminated at more than 4000 lux

at 3200 K lighting.

• Chip transistors and FETs

Transistors

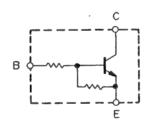






• Digital Transistor

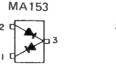
DTC124K



• Chip diodes

MA152WA MA152WK

MA152A





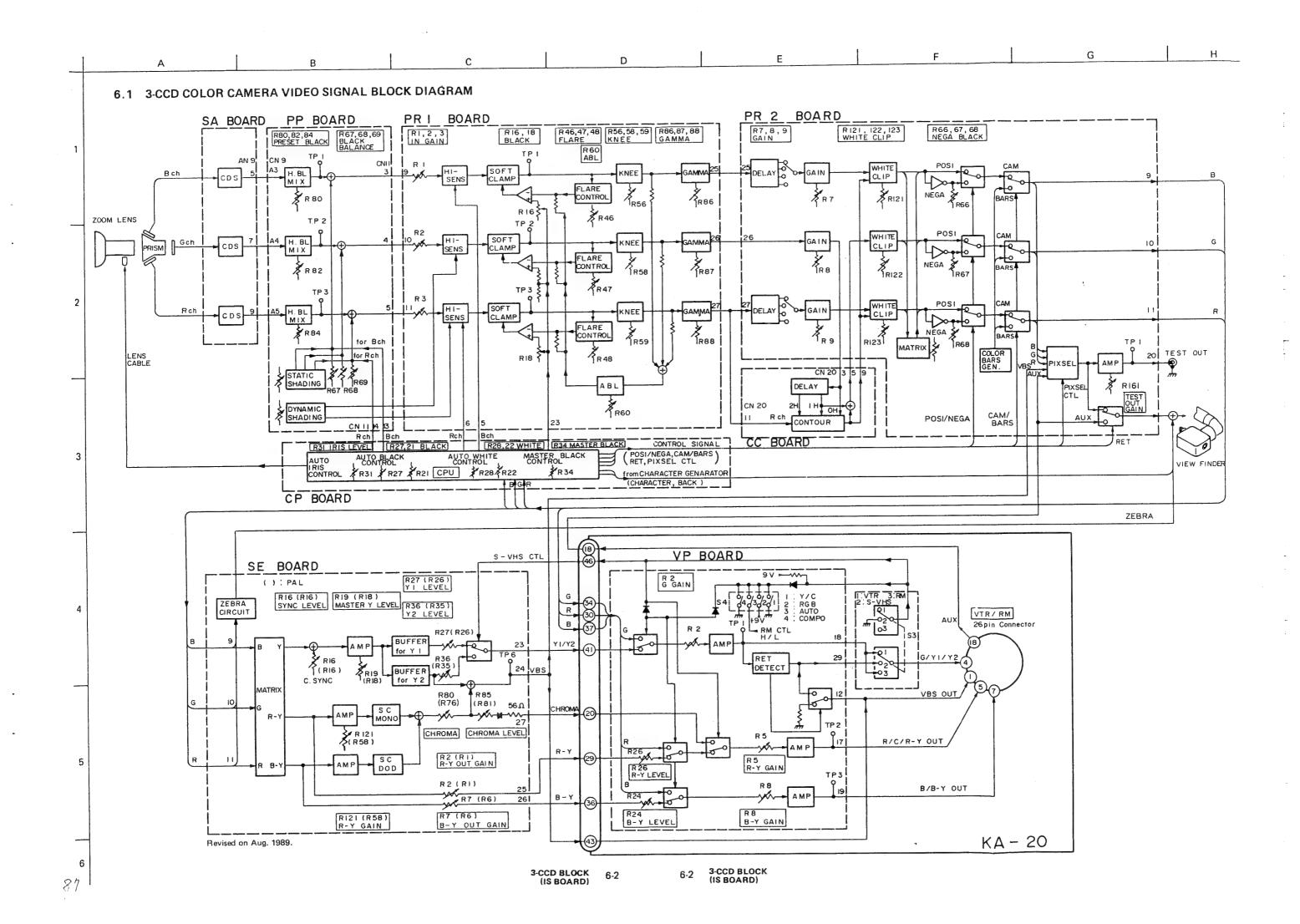
NOTES (IS BOARD)

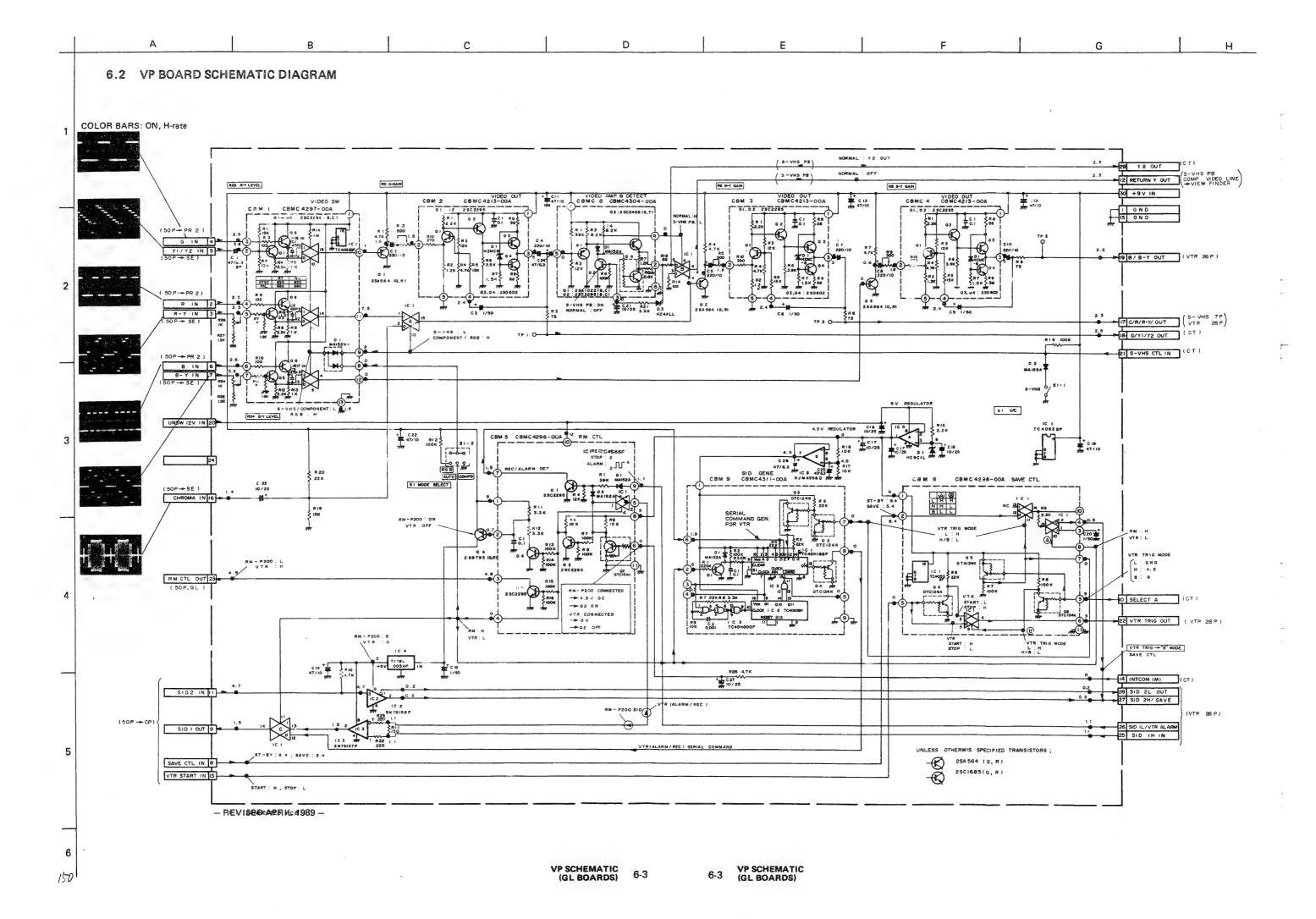
REPLACING SUBMINIATURE "CHIP" **PARTS**

- Some resistors, shoring jumpers (0 Ω resistance), ceramic capacitors, transistors, and diodes are chip parts. These chip parts cannot be reused after they are once removed.
- Soldering cautions:
- 1) Do not apply heat for more than 3 seconds.
- 2) Avoid using a rubbing stroke when soldering.
- 3) Discard removed chips; do not reuse them.
- 4) Supplementary cementing is not required.
- 5) Use care not to scratch or otherwise damage the chips.
- Resistors and capacitors are not interchangeable with chip parts which is used in the color cameras BY-110, KY-210, etc., because of size difference. In case of part order, refer to the section "ELECTRICAL PARTS LIST".

TERMINAL LOGIC

Top bar of terminal name shows input or output logic. Top bar shows, the control circuit become active at negative (low) logic input for example.

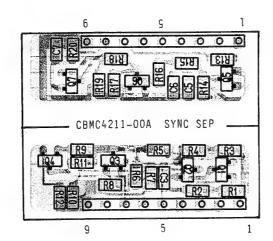




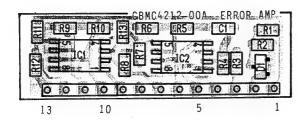
A B C VP GL E F G H

6.3 GL CIRCUIT BAORDS

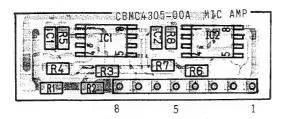
- SYNC SEP board (CBM1) [CBMC4211-00A] -



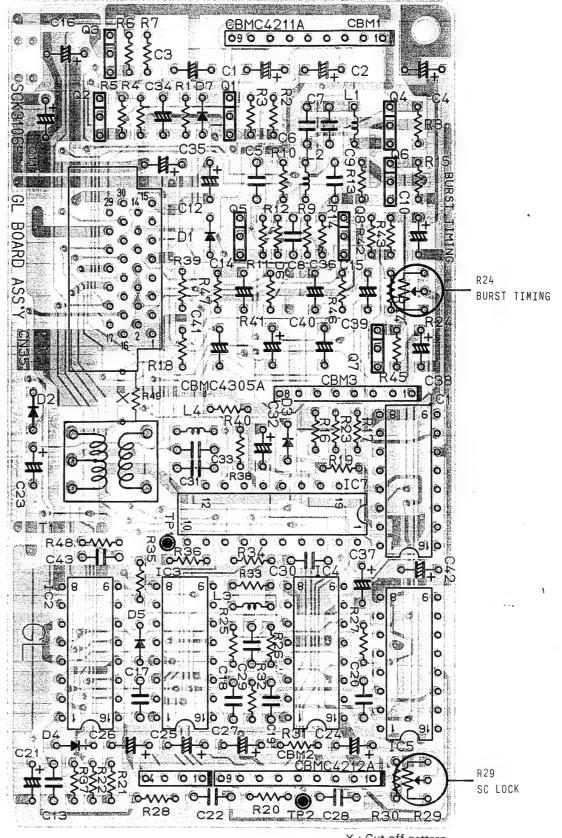
- ERROR AMP board (CBM2) [CBMC4212-00A] -

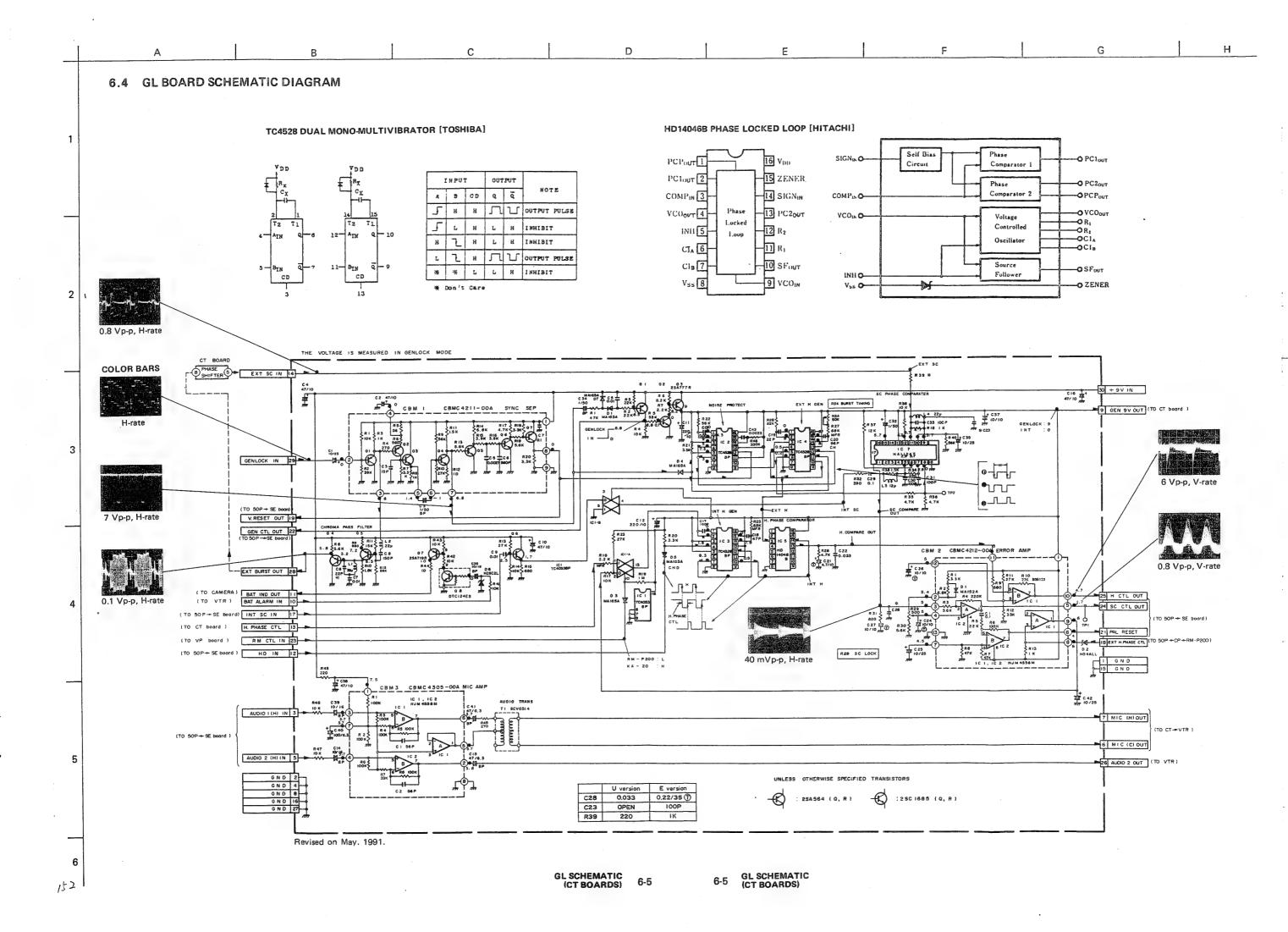


- MIC AMP board (CBM3) [CBMC4305-00A] -



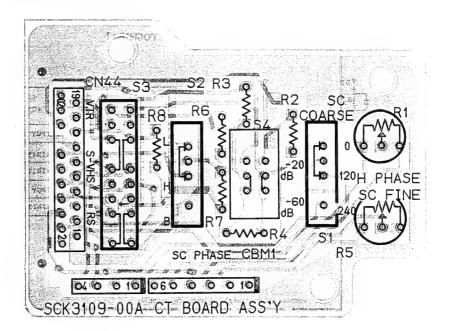
- GL board -



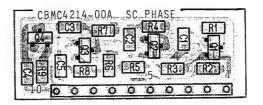


GL CT A B C D

6.5 CT CIRCUIT BOARD



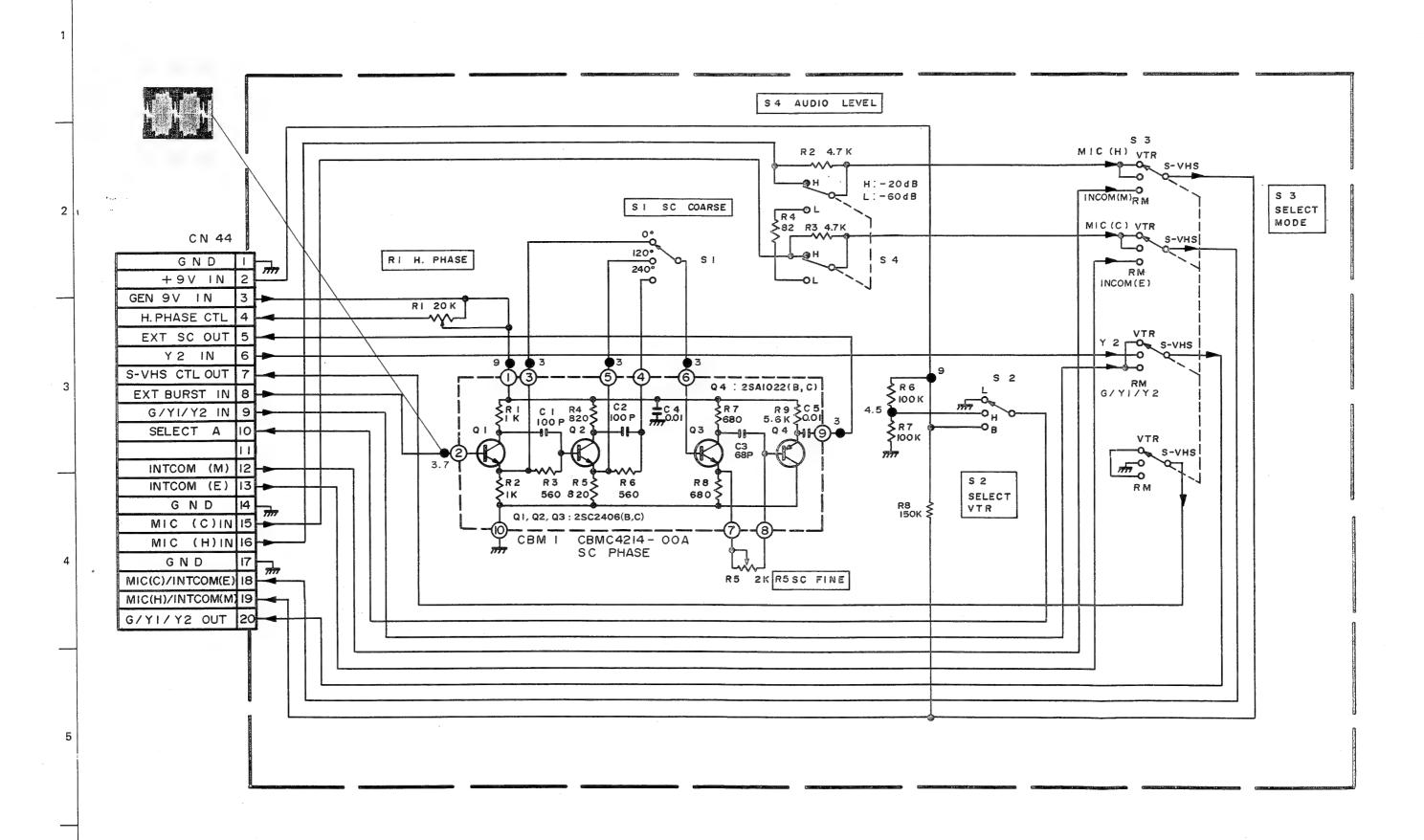
- SC PHASE board (CBM1) [CBMC4214-00A] -



6-6

6-6 (GL SCHEMATIC)

6.6 CT BOARD SCHEMATIC DIAGRAM



CT SCHEMATIC (MT BOARD) 6-7 6-7 CT SCHEMATIC (MT BOARD)

154

MT2 OVERALL CT 6.7 MT2 CIRCUIT BOARD

6-8

6-8 MT BOARD (CT SCHEMATIC)

6.8 CAMERA ADAPTER OVERALL Y/C 443 (PAL) INCOM LEVEL EAR PHONE GENLOCK INCOM CT BOARD Y/C 358 (NTSC) BNC INT BOARD VR BOARD ER BOARD CONNECTO MICRO SW CN 4 BOARD 110 (D) S 8 **③**Ψ DC IN **-**∼∨∿₁ CN3 BOARD POWER CN I BOARD CN 44 ΔN 43 J 6 DC INPUT (3 Q) 무난 AN 46 CN2 BOARD J 5 35 26 P CONNECTOR CN33 TO KY-17/25 CAMERA HEAD I INT SC IN CN 35 GL GND CN 36 CN 34 VP CN 38 BAT IND OUT | 35 - ||

BAT IND OUT | 34 - 24

SID | OUT | 34 - 9

SID 2 | IN | 4

SAVE CTL | IN | 5

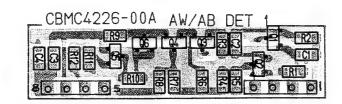
S-VHS CTL OUT | 6 VHS (L) VHS (H) VTR (B) S-VHS RM GND I G N D 36-37 I G N D 4 -5 V IN 36 - 25 2 + 12 V IN I VIDEO OUT . GND 2 R IN 48 36 - 26 3 + 12 V IN 3 AUDIO I (H) IN 3 R-Y IN G N D 4 + 12 V IN 5 + 12 V IN GND 36 -40 GND 47 4 G IN 4 6 N D HD IN Y2 OUT G/Y2 OUT YI OUT 36-12 5 AUDIO 2 (H) IN 5 Y1/Y2 IN 6 B IN 34-17 6 C/R/R-Y OUT 42-20 77 G N D 8 V. RESET OUT 36 -15 44 - 15 C OUT R/C OUT R-Y OUT 36-31 46 6 MIC(C) OUT 9 GEN CTL IN 36-9 36 - 16 44 - 16 GND GND GND 7 MIC (H) OUT 7 B-Y IN 43/177 G N D 7 7 34-12 10 PAL RESET OUT B OUT B-Y OUT 36 - 5 36-29 B G N D 8 G/YI/Y2 OUT 8 SAVE CTL IN COMPO VIDEO IN 8 35-21 11 SC CTL OUT 7 44 - 3 36-8/M 9 6 N D 36 - 3 G N D G N D 36-27 10 9 SID I OUT 9 GEN 9V OUT 12 H CTL OUT H CTL OUT G N D 10 38 - 16 - INTCOM (M) MIC (H) 44 - 10 IO COMPO VIDEO OUT IO SELECT A 10 BAT ALARM IN 36-1 36-13 34-19 m 11 G N D G N D INTCOM (E) MIC (C) II BAT IND OUT II SID 2 IN 14 EXT. H. PHASE CTL 12 B/B-Y OUT 44-19 13 MIC(H)/INCOM(M) 36 - 8 GND GND 12 RETURN Y OUT 12 C. HD IN MIC (G) HD IN 13 35-12 CHROMA IN 14 34-16 36 -30 13 VTR START IN AUDIO (C) 40-1,44-12 44 - 5 44-18 14 MIC(C)/INCOM(E) AUDIO | (H) | N 36-22 20 37 H EXT SC IN 15 34-6 16 34-7 SERIAL (-) SID I H TAPE REMAIN

VTR ALARM REC WARNING SID IL VTR ALARM 36-20 15 G N D 8 IN 15 G N D IB AUX OUT 777 36-14 38-6 16 CHROMA 45-1 17 C/R/R-Y OUT 45-3 18 G/YI/YZ OUT 36 16 G N D SYNC OUT 8 - Y IN nn 36-18 36-14 GEN LOCK IN GEN LOCK IN 17 m₃₅₋₁₇ 17 INT SC IN CHROMA IN GND 14__ 36 -24 18 EXT H. PHASE CT INT S C IN GND 38-12 19 B /8-Y OUT AUX IN AUX IN AUX IN 19 V. RESET OUT GND MIC (G) 7/m₂₆₋₃₃ 35-2677 21 AUDIO 2 OUT 25 20 PB AUDIO 23 21 GND GND GND 20 UNSW 12 V 1N 23 AUDIO 2 (C) AUX OUT AUDIO / SAVE 24 AUDIO 2 (H) IN 25 CAM ON 26 SERIAL CODE AUDIO/SAVE AUDIO/SAVE SID 2 H 21 PAL RESET OUT 16 AUDIO 1 (C) 21 mm 35-3 21 S-VHS CTL IN 36-31 22 G N D 23 SHIELD 22 VTR TRIG OUT 22 GEN CTL OUT GND SID 2L GND AUDIO I (H) IN 22 G N D 23 AUDIO I (H) IN 22
G N D 23
MT 35-18
ST H.PHASE CTL 24
30 R IN 25 34-2
29 R-Y IN 26 35-25
28 R M CTL OUT 27 35-24
21 SC CTL OUT 29 35-24
27 23 RM CTL OUT 23 RM CTL IN 34-27 24 S1D 2 L OUT 36-29 22 AUDIO 2 OUT SERIAL 27 VTR START IN 28 RM CTL OUT 36-2 24 SC CTL OUT 36-27 38-18 25 SID IH IN 25 H CTL OU 26 AUDIO 2 OUT SHIELD RM CTL OUT 36-28 H CTL OUT 25 AUDIO / SID 2 H GND 38-28 26 SID IL/VTR ALARM 27 SID 2H/ SAVE 38-21 35-29 26 G N D 27 GEN LOCK IN 28 SID IL/VTR ALARM 29 R-Y IN 27 G N D
28 EXT BURST OUT 36-25 38-24 28 SID2L OUT 29 Y2 OUT m744-8 36-5 34 - 23 35 - 24 SAVE CTL IN 38 - 27 32 AUDIO MONITER 33 G N D 34-13 VTR START IN 30-GEN CTL OUT 31 30 + 9 V 9 35-22 35-5 G IN 24.... GND AUDIO 2 (H) IN 32 777 36-15 23 B-Y IN 39 36-15 + 12 V OUT 34 + 12 V OUT 35 G N O 36 - 5 V I N 37 BIN 40 EE (H) +12 V OUT 36-35 +12 V OUT 36⊣! + 9 V 1 N 38 G N D 39 G IN 40 Y1/Y2 IN *™*36-8 COMPO VIDEO IN GND 46 S-VHS CTL OUT 36-4 47 SID 2 IN 48 SID I OUT MT 2 BOARD 36-3 SID I OUT 50 BAT IND OUT 36-1 - REVISED APRIL 1989 -

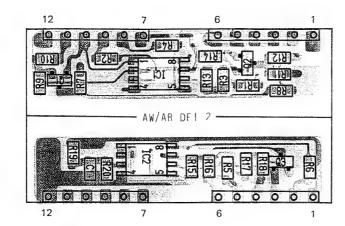
6 156

6.18 CP CIRCUIT BOARDS

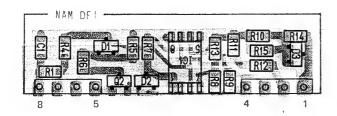
- AW/AB DET1 board (CBM1/CBM2/CBM3) [CBMC4226-00A] -



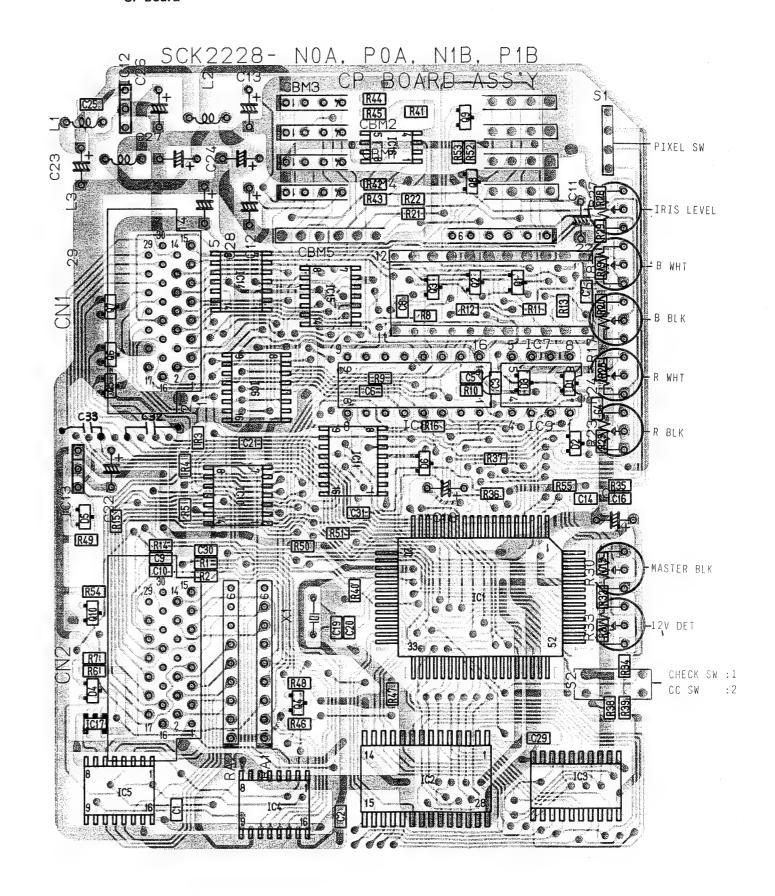
- AW/AB DET2 board (CBM5) [CBMC4306-00A] -



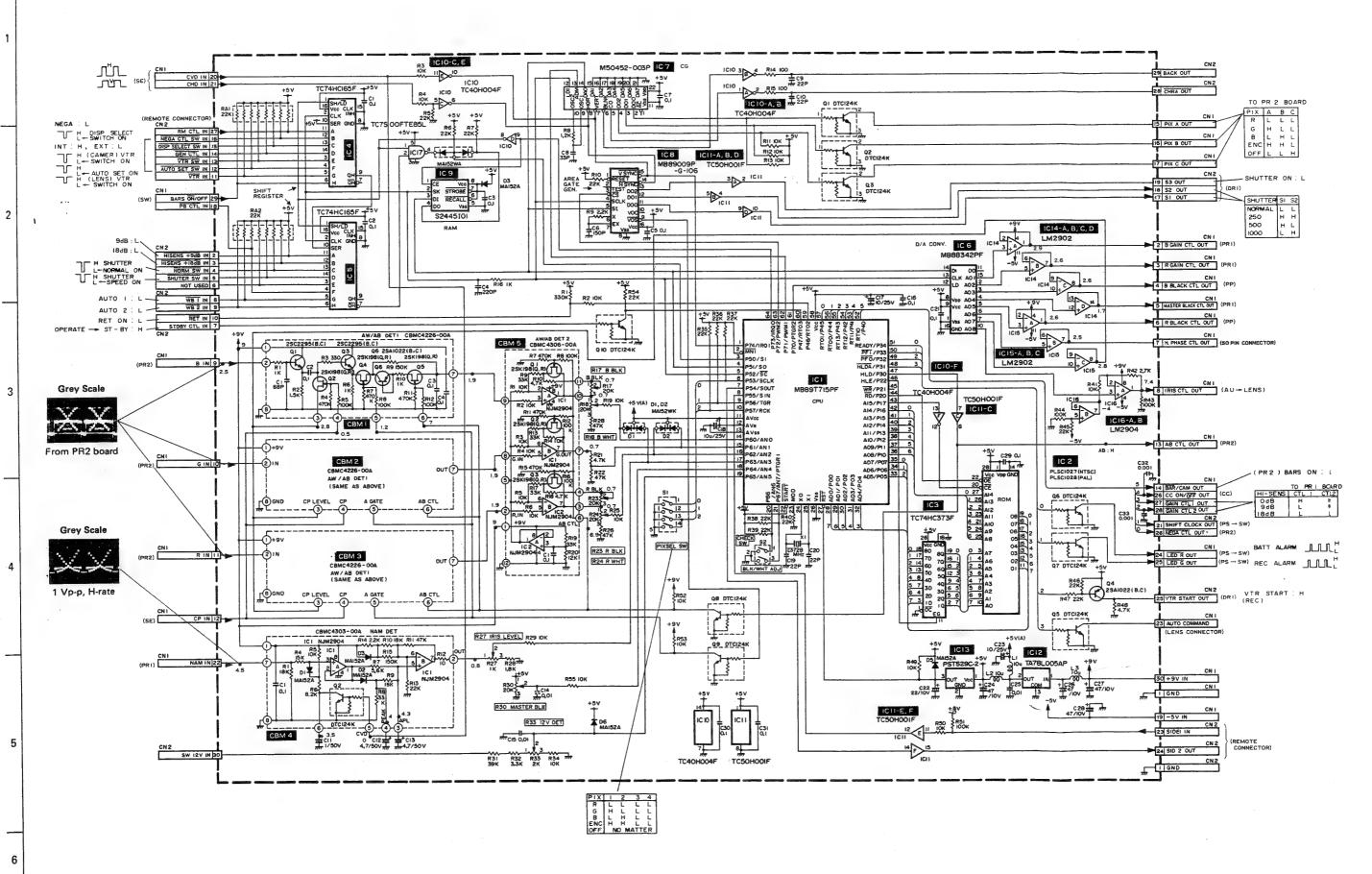
- NAM DET board (CBM4) [CBMC4303-00A] -



- CP board -



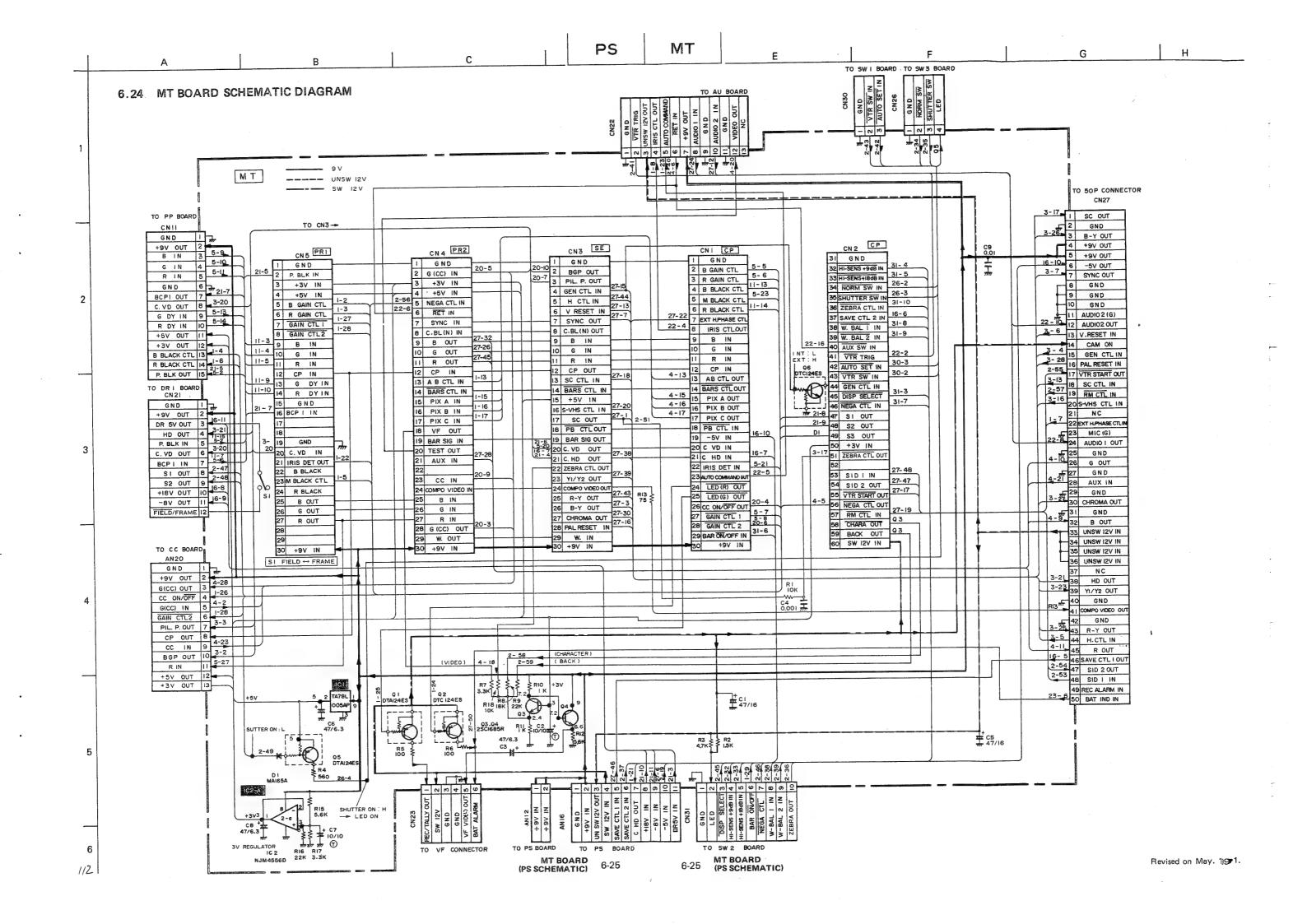
6.19 CP BOARD SCHEMATIC DIAGRAM



CP SCHEMATIC 6-20

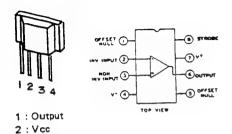
6-20 CP SCHEMATIC

2



6.28 SCHEMATIC DIAGRAM OF ICs

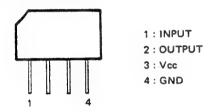
CA3130E [RCA] (OP. Amp.)



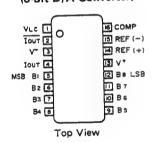
3 : Input

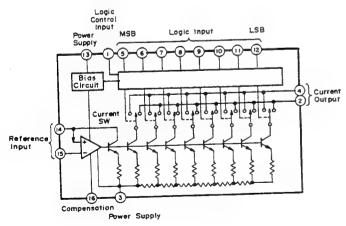
4 : GND

DN819 [MATSUSHITA] (Integrated Injection Logic Frequency Divider)

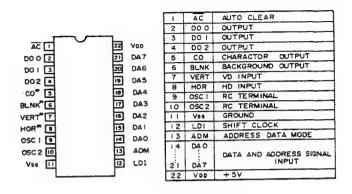


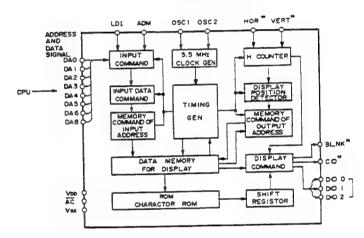
IR9K08 [SHARP] (8-bit D/A Converter)



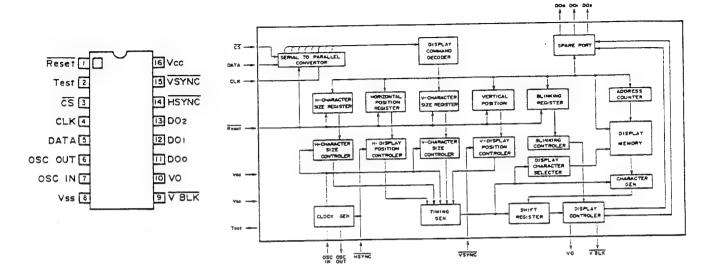


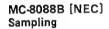
M50452-001P [MITSUBISHI] (Character Generator)

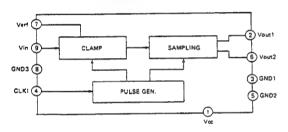




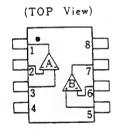
MB89009P-G-106 [FUJITSU] (Character Generator)





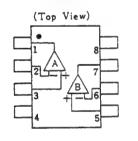


NJM062M [JRC] (J-FET Input Dual OP. Amps)



- 1. A OUTPUT
- 2. A-INPUT
- 3. A+INPUT
- 4 V-
- 5. B+INPUT
- 6. B-INPUT
- 7. B OUTPUT
- 8. V·

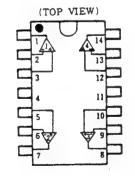
NJM2068MD [JRC] NJM4558M/NJM4558D [JRC] NJM4560M [JRC] NJM4556D [JRC] LM2904M [TEXAS] (Dual OP. Amplifier)



1. A OUTPUT
2. A-INPUT
3. A+INPUT
4. V5. B+INPUT
6. B-INPUT
7. B OUTPUT
8. V-

Pin

NJM2902M [JRC] (Quad OP. Amplifire)



Pin

1. OUTPUT 1 8. OUTPUT 3

2. —INPUT 1 9. —INPUT 3

3. +INPUT 1 10. +INPUT 3

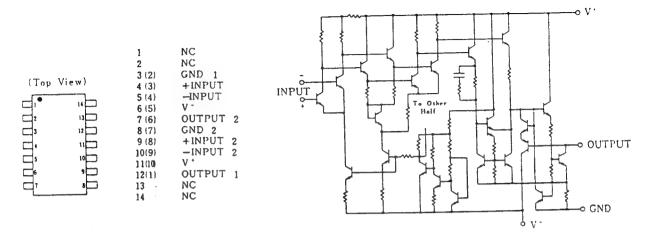
4. V 11. GROUND

5. +INPUT 2 12. +INPUT 4

6. —INPUT 2 13. —INPUT 4

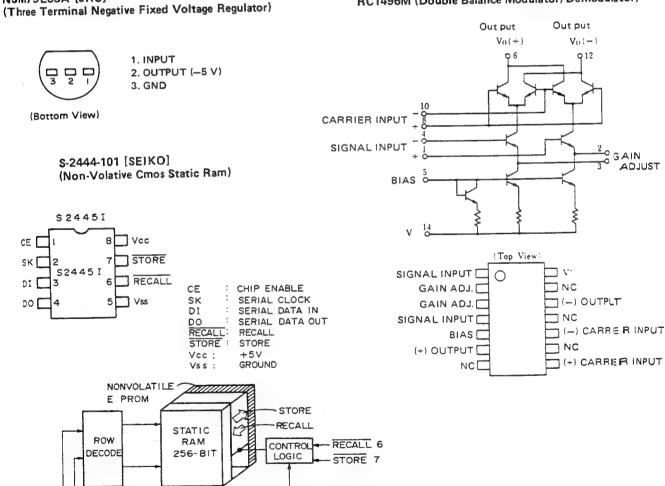
7. OUTPUT 2 14. OUTPUT 4

NJM319M [JRC] (Voltage Comparator)



NJM79L05A [JRC]

RC1496M (Double Balance Modulator/Demodulator)



DO 4

CE I DI 3 SK 2

INSTRUCTION REGISTER

INSTRUCTION DECODE

COLUMN

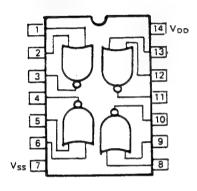
4-BIT

TA78005AP [TOSHIBA] TA78L008AP [TOSHIBA] (Three Terminal Positive Fixed Voltage Regulator)

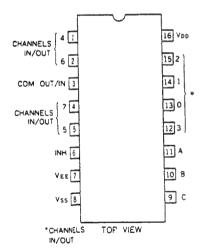


- 1. INPUT
- 2. OUTPUT
- 3. GND

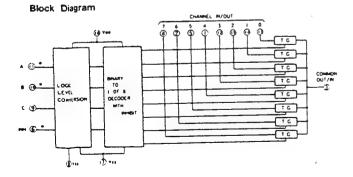
TC4001BP/BF [TOSHIBA] (Nor Gate)



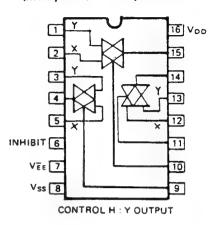
TC4051BF (MULTIPLEXER/DEMULTIPLEXER) [TOSHIBA]



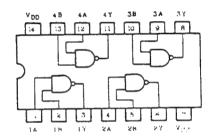
INPUT S	TAT	ES		TON" CHANNELIS
INHIBIT	C	В	A	ON CHANGELO
0	0	0	0	0
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
0	1	0	0	4
0	1	0	1	5
0	1	1	0	6
0	1	1	1	7
1	X	x	X	NONE



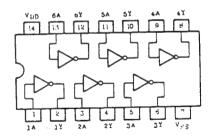
TC4053BP/BF [TOSHIBA] (Multiplexer/Demultiplexer)



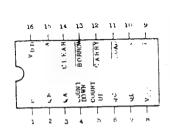
TC40H000F [TOSHIBA] (Quad 2-Input Nand Gate)



TC40H004F/TC74HC04F [TOSHIBA] (Hex Inverter)



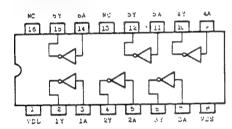
TC40H193F [TOSHIBA] (Synchronous 4-Bit Binary Up/Down Counter Dual Clock With Clear)



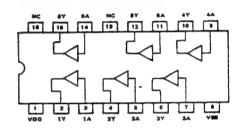
COUNT	COUNT DOWN	LOAD	CLEAR	ACTION
	н	н	L	COUNT UP
	н	Н	L	NO COUNT
Н		н	L	COUNT DOWN
Н		Н	L	NO COUNT
•	•	L	L	PRESET
•	•	•	Н	RESET

^{*} Don't care

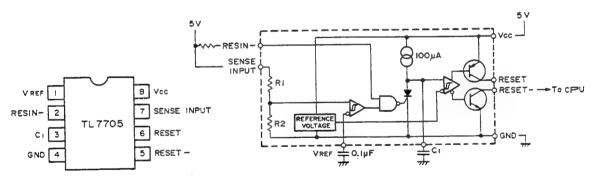
TC50H000F [TOSHIBA] (Hex Buffer/Converter Inverting Type)



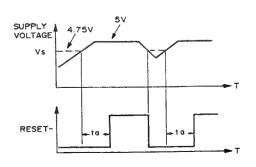
TC50H001F [TOSHIBA] (Hex Buffer/Converter Non-Inverting Type)



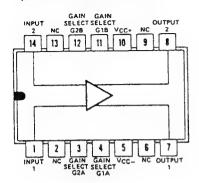
TL7705 [TEXAS] (Reset Pulse Generator)



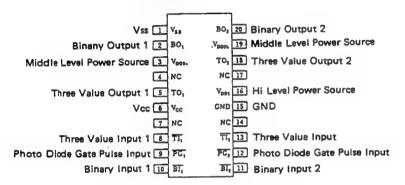
R1 = 9.0 KA, R2 = 10.0 KA

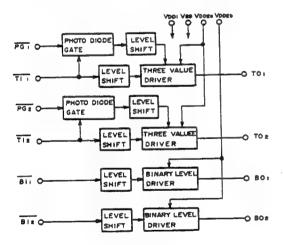


UA733CN [TEXAS] (Differential Video Amplifier)



UPD6147G [NEC] (CCD Driver)





SECTION 7 ELECTRICAL PARTS LIST

SAFETY PRECAUTION

Parts identified by the \triangle symbol are critical for safety. Replace only with specified part numbers. For maximum reliability and performance, all other replacement parts should be identical to those specified.

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS:

RESISTORS – All resistance values are in ohms (Ω).

K : 1 000 M : 1 000 000

CR : Carbon Resistor
VR : Variable Resistor (Potentiometer)

MFR: Metal Film Resistor
Chip R: Chip Resistor

CAPACITORS - All capacitance values are in µF, unless otherwise indicated.

P : μμF

C Cap : Ceramic Capacitor
E Cap : Electrolytic Capacitor
FM Cap : Film Mica Capacitor
MY Cap : Mylar Capacitor
NP Cap : Non-polar Capacitor
T Cap : Tantalum Capacitor
TR Cap : Trimmer Capacitor

MP Cap : Metalized Paper Capacitor

7.1 IS board assembly 01 01 7.2 SA board assembly 02 02 02

	7.3 DI	R 1 board assembl	y 03	0300000
7	Symbol No.	Part No.	Part Name	Description
	IC1 IC2 IC3 IC4 IC5	UPD9317GB UPD9316GB TC74HCQ4AF TC50H000F UPD9318GB	I C I C I C I C	NEC NEC TOSHIBA TOSHIBA NEC
	Q1 Q2	2SD602(Q.R) DTC124EK	TRANSISTOR TRANSISTOR	MATSUSHITA ROHM
	D 1 D 2	FC-52M MA152WK	DIODE	FUJITSU MATSUSHITA
	R 1 R 2 3 R 4 5	NRSA02J-472 NRSA02J-103 NRSA02J-471 NRSA02J-471 NRSA02J-471	MGR MGR MGR MGR MGR	4.7K 1/10W 10K 1/10W 470 1/10W 470 1/10W 470 1/10W
	R6 R7 R8 R9 R10	QVPB614-102 NRSA02J-100 NRSA02J-105 NRSA02J-104 NRSA02J-331	VR MGR MGR MGR MGR	1.0K SAMPE TIMING 10 1/10W 1.0M 1/10W 100K 1/10W 330 1/10W
	R11 R12 R13 R14	NRSA02J-682 NRSA02J-102 NRSA02J-103 NRSA02J-103 NRSA02J-103	MGR MGR MGR MGR MGR	6.8K 1/10W for NTSC 1K 1/10W for PAL 10K 1/10W NTSC only 10K 1/10W PAL only 10K 1/10W PAL only
	R15 R16 R17	NRSA02J-103 NRSA02J-102 NRSA02J-822	MGR MGR MGR	10K 1/10W NTSC only 1.0K 1/10W 8.2K 1/10W
	R18 R19 R20 R21 R22	NRSA02J-102 NRSA02J-102 NRSA02J-4R7	MGR MGR MGR	1.0K 1/10W 1.0K 1/10W 4.7 1/10W
	R 234567	NRSA02J-100 NRSA02J-100 NRSA02J-471 NRSA02J-471 NRSA02J-561 NRSA02J-473	MGR MGR MGR MGR	10 1/10W 470 1/10W 470 1/10W 560 1/10W 47K 1/10W 10K 1/10W
	R27 R28	NRSA02J-103	MGR	
	C1 C2 C3 C4 C7	GER41EM-106 GETA1AM-227 NCF21EI-104 NCF21EI-104 NCF21EZ-104 NCT03CH-220	E CAP CCAP CCAP	10 N55V 1055V 1055V 220 NNOV
	C8 C9 C10 C11 C12	NCT03CH-220 NCT03CH-100 NCT03CH-204 NCT03CH-221 NCF21EZ-104	C CAP C CAP C CAP C CAP	22P 50V 0.10 50V 0.10 N5V
	C13 C15 C16 C17 C18	NCF21EZ-104 NCT03CH-8R0 NCT03CH-221 QEJ41CM-225 QEJ41AM-106	C CAP CCAP T CAP	0.10 R5V 8P P NNOV 22.2 10
	C19 C20	NCF21EZ-104 QCT25CH-150	C CAP	0.10 25V 15P 50V
	X1	SCV1316-002	CRYSTAL	10 PIN

Symbol No.

DL1 DL2 DL3

Part No.

Part Name

DELAY LINE DELAY LINE DELAY LINE

Description

120 ns 160 ns 120 ns

4PIN 2PIN 2PIN 2PIN

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7.5 PP board assembly 05

05

	R 2 board assemb		0 4	Symbol	board assembly	Part Name	Description
Symbol No.	Part No.	Part Name	Description	No.	Part No.	Part Name	Description
101 102 103 104	UPD6147G UPD6147G UPD6147G TC4053BF	I C I C	NEC NEC NEC TOSHIBA	Q1 Q2 Q3 Q4 Q5	2\$C2295(B.C) 2\$C2295(B.C) 2\$C2295(B.C) 2\$C2295(B.C) 2\$C2295(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
91 933 934 95	2SD973(Q.R) 2SD973(Q.R) 2SD793(Q.R) 2SD793(Q.R) 2SD602(Q.R)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA	Q6 Q7 Q8 Q9 Q10	2SC2295(B.C) 2SK198(Q.R) 2SK198(Q.R) 2SK198(Q.R) 2SK198(Q.R) 2SC2295(B.C)	TRANSISTOR FET FET FET TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
Q6 Q7	2SD602(Q.R) 2SD602(Q.R)	TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA	Q11 Q12 Q13 Q14 Q15	2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SC4198(Q.R)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR FET	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
003	MA152A MA152A MA152WA	DIODE	MATSUSHITA MATSUSHITA 3.9K 1/10W	Q16 Q17 Q18 Q19	2SA1022(B.C) 2SC2295(B.C) 2SK198(G.R) 2SC2295(B.C)	TRANSISTOR TRANSISTOR FET TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
REERE B	NRSA02J-392 NRSA02J-222 NRSA02J-102 NRSA02J-223 NRSA02J-681 NRSA02J-223	MGR MGGR MGGR MG R	2.2K 1/10W 22K 1/10W 680 1/10W	RRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR	NRSA02J-333 NRSA02J-393 NRSA02J-103 NRSA02J-222 NRSA02J-222	MGR MGR MGR MGR MGR	33K 1/10W 39K 1/10H 10K 1/10W 2.2K 1/10W
R6 R7 R8 R9 R10	QVPB613-502 QVPB614-103 NRSA02J-222 NRSA02J-153	VR VR MGR MGR	22K 1/10W 5.0K VL 10K VH 2.2M 1/10W 15K 1/10W	R6 R7 R8 R9 R10	QVPB613-203 NRSA02J-104 QVPB613-203 NRSA02J-104 QVPB613-203	VR MGR VR MGR VR	20K B H SAW 100K 1/10W 20K G H SAW 100K R H SAW 20K R H SAW
RRRRR RRRR	QVPC404-103 NRSA02J-472 NRSA02J-104 NRSA02J-222 QVPC404-103 NRSA02J-472	VR MGR MGR MGR VR MGR	2.2K 1/10W 10K R VSUB 4.7K 1/10W 100K 1/10W 2.2K 1/10W 10K B VSUB 4.7K 1/10W	R11 R12 R13 R14 R15	NRSA02J-104 NRSA02J-223 NRSA02J-154 NRSA02J-222 NRSA02J-222	MGR MGR MGR MGR MGR	100K 1/10W 1250K 1/10W 1502K 1/10W 2.2K 1/10W
RZÓ	NRSAO2J-104 NRSAO2J-1223 QVPC404-103 NRSAO2J-472 NRSAO2J-472 NRSAO2J-472	MGGR MGGR VR MGGR MGGR	2.2K 1/10W 10K G VSUB	R16 R17 R18 R19 R20	QVPB613-203 NRSA02J-153 QVPB613-203 NRSA02J-153 QVPB613-203	VR MGR VR MGR VR	20K B H PARA 15K 1/10W 20K G H PARA 1/10W 20K R H PARA
204568 202222 202222 2022 2022	NRSA02J-472 QVPB613-103 NRSA02J-153 NRSA02J-181	MGR VR MGR MGR	100K 1/10W 1.7K 1/10W 10K VH(S) 15K 1/10W 180 1/10W	R222345	NRSA02J-153 NRSA02J-103 NRSA02J-393 NRSA02J-103 NRSA02J-222	MGR MGR MGR MGR MGR	15K 1/10W 10K 1/10W 39K 1/10W 10K 1/10W 2.2K 1/10W
C12 C33 C45	QER40JM-107 QER40JM-107 QER41EM-106 NCF21EZ-104 QER41EM-106	E CAP E CAP E CAP C CAP	47 6.3V 10 6.3V 10 25V 0.10 25V 10 25V	R26 R27 R28 R29 R30	NRSA02J-222 QVPB613-203 NRSA02J-104 QVPB613-203 NRSA02J-104	MGR VR MGR VR MGR	2.2K 1/10W 20K B V SAW 100K 1/10W 20K G V SAW 100K 1/10W
C6 C7 C8 C10	NCF21EZ-104 QER40JM-476 QER41EM-106 QET41EM-107 QER41EM-106	C C C A P E C C C A P E C C A P	0.10 25V 47 6.3V 10 25V 220 10V 10 25V	R3123 R3334 R33 R33	QVPB613-203 NRSA02J-104 QVP8613-503 NRSA02J-154 QVP8613-503	VR MGR VR MGR VR	20K R V SAW 100K 1/10W 50K G DY SAW 150K 1/10W 50K R DY SAW
00000 00000	NCF21EZ-104 NCF21EZ-104 GER41EM-106 GEJ41CM-106 NCF21EZ-104	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	0.10 25V 0.10 25V 10 25V 10 16V 0.10 25V	R36 R37 R38 R39 R40	NRSA02J-154 NRSA02J-223 NRSA02J-154 NRSA02J-222 NRSA02J-222	MGR MGR MGR MGR MGR	150K 1/10W 22K 1/10W 150K 1/10W 2.2K 1/10W 2.2K 1/10W
C16 C17 C18 C19	QER41EM-106 NCF21EZ-104 QER41EM-106 NCF21EZ-104	E C C C C C C C C C C C C C C C C C C C	10 25V 10 25V 10 25V 0-10 25V	R41 R42 R43 R44 R45	QVPB613-203 NRSA02J-223 QVPB613-203 NRSA02J-223 QVPB613-203	VR MGR VR MGR VR	20K B V PARA 22K 1/10W 20K G V PARA 22K 1/10W 20K R V PARA
CN6 CN7 CN8	SCV1074-012 SCV1074-012 SCV1074-012	CONNECTOR CONNECTOR CONNECTOR	12PIN 12PIN 12PIN	R46 R47 R48 R49 R50	NRSA02J-223 QVPB613-503 NRSA02J-153 QVPB613-503 NRSA02J-153	MGR VR MGR VR MGR	22K 1/10W 50K G PARA DY 15K 1/10W 50K R PARA DY 15K 1/10W
				R51 R52 R53 R54 R55	NRSA02J-222 NRSA02J-222 NRSA02J-153 NRSA02J-153 NRSA02J-153	MGR MGR MGR MGR MGR	2.2K 1/10W 2.5K 1/10W 15K 1/10W 15K 1/10W
				R56 R57 R58 R59 R60	NRSA02J-152 NRSA02J-152 NRSA02J-152 NRSA02J-104 NRSA02J-104	MGR MGR MGR MGR	1.5K 1/10W 1.55K 1/10W 1.55K 1/10W 1.00K 1/10W
				R61 R62 R63 R64 R65	NRSA02J-473 NRSA02J-103 NRSA02J-473 NRSA02J-103 NRSA02J-473	MGR MGR MGR MGR MGR	47K 1/10W 10K 1/10W 47K 1/10W 10K 1/10W 47K 1/10W
				R66 R67 R68 R69 R76	QVP8613-103 QVP8613-103 QVP8613-103	MGR VR VR VR MGR	10K 1/1CW 10K 3 BLACK BAL 10K G BLACK BAL 10K R BLACK BAL 100 1/10W

Symbol No.	Part No.	Part Name	Description
R77 R78 R79 R80 R81	NRSA02J-101 NRSA02J-101 NRSA02J-103 QVP3613-103 NRSA02J-103	MGR MGR MGR VR MGR	100 1/10W 100 1/10W 10K 1/10W 10K B PRESET BLACK 10K 1/10W
R82 R83 R85 R86	QVPB613-103 NRSA02J-103 QVPB613-103 NRSA02J-271 NRSA02J-331	VR MGR VR MGR MGR	10K G PRESET BLACK 10K 1/10W 10K R PRESET BLACK 270 1/10W 330 1/10W
R889 R899 R991	NRSAO2J-331 NRSAO2J-682 NRSAO2J-682 NRSAO2J-682 NRSAO2J-333	MGR MGR MGR MGR MGR	330 1/10W 6.8K 1/10W 6.8K 1/10W 6.8K 1/10W 33K 1/10W
R92 R93 R94 R96	NRSAO2J-474 NRSAO2J-683 NRSAO2J-102 NRSAO2J-472 NRSAO2J-152	MGR MGR MGR MGR MGR	470K 1/10W 68K 1/10W 1.0K 1/10W 4.7K 1/10W 1.5K 1/10W
R97 R98 R99 R1001	NRSAO2J-221 NRSAO2J-223 NRSAO2J-102 NRSAO2J-472 NRSAO2J-472	MGR MGR MGR MGR MGR	220 1/10W 22K 1/10W 1.0K 1/10W 4.7K 1/10W 4.7K 1/10W
R1003 R1005 R1006 R100	NRSAO2J-472 QVP8613-104 NRSAO2J-104 QVP8613-104 NRSAO2J-104	MGR VR MGR VR MGR	4.7K 1/10W 100K G DY H SAW 100X 1/10W 100K R DY H SAW 100K 1/10W
C1 CC3 CC5	NCTO3CH-101 NCB21HK-222 NCB21HK-222 NCB21HK-222 NCB21HK-222	C CAP CCAP CCAP CCAP	100P 50V 2200P 50V 2200P 50V 2200P 50V
C6 C7 C8 C10	NCB21HK-222 NCB21HZ-104 GEJ41VM-105 GER40JM-476 GEJ41VM-105	C CAP C CAP E CAP T CAP	2200P 50V 0.10 25V 1.0 35V 47 6.3V 1.0 35V
C112 C113 C115 C115	QER40JM-476 QEPA0JM-476 NCT03CH-470 QEPA0JM-476 NCT03CH-470	E CAP NP CAP C CAP NP CAP C CAP	47 6.3V 47 6.3V 47P 50V 47 6.3V 47P 50V
C16 C17 C18 C19 C20	QEPAOJM-476 NCTO3CH-476 QER40JM-476 QEJ41AM-475 QEJ41AM-475	NP CAP CAP E CAP T CAP	47 6.3V 47P 50V 47 6.3V 4.7 10V
C222345	QEJ41AM-475 QEJ41AM-106 QEJ41AM-106 QEJ41AM-106 QER41AM-476	T CAP T CAP T CAP E CAP	4.7 10V 10 10V 10 10V 10 10V 47 10V
C26 C27 C228 C30	QER41AM-476 QER41AM-476 QER40JM-476 QER40JM-476 QER41AM-476	E E E E E E E E E E E E E E E E E E E	47 10V 47 10V 47 6.3V 47 6.3V 47 10V
C31 C32	NCT03CH-101 NCT03CH-151	C CAP	100P 50V 150P 50V
CN9 CN11	SCV1074-012 SCV1319-15S	CONNECTOR	12PIN 15PIN
			3

Symbol No.	Part No.	Part Name	Description
• CBM1	CBMC4222-00A	PRE BL MIX CBM	
Q1 Q2 Q3 Q4 Q5	2SK198(Q.R) 2SA1022(B.C) 2SC2295(B.C) 2SK198(Q.R) 2SC2295(B.C)		MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
96 97 98 99	ZSK198(Q.R) ZSA1022(B.C) ZSC2295(B.C) ZSK198(Q.R) ZSC2295(B.C)	FET TRANSISTOR TRANSISTOR FET TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
R1 R23 R34 R5	NRSA02J-333 NRSA02J-824 NRSA02J-683 NRSA02J-102 NRSA02J-472	MGR MGR MGR MGR MGR	33K 1/10W 220K 1/10W 68K 1/10W 1.0K 1/10W 4.7K 1/10W
R6 R7 R8 R9 R10	NRSAO2J-152 NRSAO2J-221 NRSAO2J-223 NRSAO2J-102 NRSAO2J-333	MGR MGR MGR MGR MGR MGR	22K 1/10W 1/10W 33K 1/10W
R112 R123 R134 R15	NRSAO2J-824 NRSAO2J-683 NRSAO2J-102 NRSAO2J-472 NRSAO2J-152	MGGR MGGR MGGR	820K 1/10W 68K 1/10W 1.0K 1/10W 4.7K 1/10W
R16 R17 R18	NRSA02J-221 NRSA02J-223 NRSA02J-102		220 1/10W 22K 1/10W 1.0K 1/10W
1NM419	NCT03CH-101 NCT03CH-101 NCT03CH-151 NCT03CH-151 NCT03CH-151 NCF21EZ-104	P.P.P.P.P.P.P.P.P.P.P.P.P.P.P.P.P.P.P.	100P 50V 100P 50V 1050P 50V 1150P 50V
	SCV1210-012	CONNECTOR (CLIP	
• CBM2	CBMC4223-00A	SH MIX CBM	
1 C 1 1 C 2	NJM4558M NJM4558M	īC	JRC
0 00000 0 0100000	25K198(Q.R) 25K198(Q.R) 25K198(Q.R) 25K2295(B.C) 25C2295(B.C) 25C2295(B.C)	FET FET TRANSISTOR TRANSISTOR	MATSUSHIT A MATSUSHIT A MATSUSHIT A MATSUSHIT A MATSUSHIT A MATSUSHIT A
	N284021-223	MGR	1 22K 1/1 0W
0.0.000	NRSSAOARRAN NRSSAOARRAN 	758 868 868 768	2 X X X X X X X X X X X X X X X X X X X
0.0.000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NRSA02J-332 NRSA02J-333 NRSA02J-333 NRSA02J-333 NRSA02J-472	CREACE RECEIVED TO THE PROPERTY OF THE PROPERT	3.5K 1/1 0W 2.5K 1/1 0W 2.5K 1/1 0W 2.5K 1/1 0W
מהמשמת מתממת מהמשמה מתממת ס במשמה מתממת			
R6 R7 R3 R9	NRSA02J-332 NRSA02J-3333 NRSA02J-3333 NRSA02J-472 NRSA02J-472 NRSA02J-4221 NRSA02J-221 NRSA02J-221	MGR MGRR MGGR MGR MGR MGR MGR MGR MGR MG	3K 1/1 0W
678900 1111140 678900 111140	NRSA02J-332 NRSA02J-333 NRSA02J-333 NRSA02J-333 NRSA02J-472	MGR MGGR MGGR MGGR MGGR MGGR MGGR MGGR	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

7.6	PR 1 board assembly	06	06

ymbol No.	Part No.	Part Name	Description
IC1 IC2	QMO957MCNI QM0957MCN	IC IC	JRC JRC
91 92 93 94 95	25C2295(B.C) 25C2295(B.C) 25C2295(B.C) 25C2295(B.C) 25C2295(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
067 078 0010	2SC2295(B.C) 2SK198(Q.R) 2SK198(Q.R) 2SK198(Q.R) 2SK198(Q.R)	TRANSISTOR FET FET TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
12345 903345	25A1022(B.C) 25A1022(B.C) 25C2295(B.C) 25C2295(B.C) 25C2295(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
Q16 Q17 Q18 Q19 Q19 Q10	2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
12345 223345	2SC2295(8.C) 2SC2295(8.C) 2SC2295(8.C) 2SC2295(8.C) 2SC2295(8.C) 2SC2295(8.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	ATIHOUSTAM ATIHOUSTAM ATIHOUSTAM ATIHOUSTAM ATIHOUSTAM
926 927 928 939 930	250602(Q.R) 25A1022(B.C) 25C2295(B.C) DTC124EK DTC124EK	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA ROHM ROHM
Q31 Q33 Q33	2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA
100000 00000	MA152A 152076A 152076A 152076A 152076A	01000E	MATSUSHITA HITACHI HITACHI HITACHI HITACHI
06 07 08 09	152076A 152076A 152076A 152076A 152076A	DIODE DIODE DIODE DIODE	HITACHI HITACHI HITACHI HITACHI
D11 D12 D13	152076A 152076A 152076A	DIODE	HITACHI HITACHI HITACHI
R12345	QVPB614-102 QVPB614-202 QVPB614-102 NRSA02J-152 NRSA02J-152	VR VR VR MGR MGR	1.0K B IN GAIN 2.0K G IN GAIN 1.0K R IN GAIN 1.5K 1/10W 1.5K 1/10W
R6 R7 R8 R9 R10	NRSA02J-152 NRSA02J-681 NRSA02J-1681 NRSA02J-681 NRSA02J-152	MGR MGR MGR MGR MGR	1.5K 1/10W 580 1/10W 1.0K 1/10W 580 1/10W 1.5K 1/10W
R112 R134 R145	NRSA02J-152 NRSA02J-152 NRSA02J-222 NRSA02J-472 NRSA02J-222	MGR MGR MGR MGR MGR	1.5K 1/10W 1.5K 1/10W 2.2K 1/10W 4.7K 1/10W 2.2K 1/10W
R11901 R1221	QVPB614-103 QVPB614-103 NRSA02J-153 NRSA02J-153 NRSA02J-153	VR VR MGR MGR MGR	10K B BLACK 10K R BLACK 15K 1/10W 15K 1/10W 15K 1/10W
RRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR	NRSAO2J-105 NRSAO2J-105 NRSAO2J-105 NRSAO2J-154 NRSAO2J-154	MGR MGR MGR MGR MGR	1.0M 1/10W 1.0M 1/10W 1.0M 1/10W 150K 1/10W 150K 1/10W
R27 R28 R29 R30 R31	NRSA02J-154 NRSA02J-184 NRSA02J-184 NRSA02J-184 NRSA02J-682	MGR MGR MGR MGR	150K 1/10W 180K 1/10W 180K 1/10W 180K 1/10W 6.8K 1/10W
R32 R33 R34 R35 R36	NRSAO2J-682 NRSAO2J-682 NRSAO2J-563 NRSAO2J-563 NRSAO2J-563	MGR MGR MGR MGR MGR	6.8K 1/10W 6.8K 1/10W 56K 1/10W 56K 1/10W
R37 R38 R39 R40	NRSA02J-563 NRSA02J-563 NRSA02J-563 NRSA02J-682	MGR MGR MGR MGR	56K 1/10W 56K 1/10W 56K 1/10W 6.8K 1/10W

No.	Part No.	Part Name	Description
R41	NRSAO2J-682	MGR	6.8% 1/10W
R42 R43 R44 R45 R46	NRSA02J-682 NRSA02J-223 NRSA02J-223 NRSA02J-223 QVPB613-103	MGR MGR MGR MGR VR	6.8K 1/10W 22K 1/10W 22K 1/10W 22K 1/10W 10K B FLARE
R47 R48 R49 R50 R51	QVPB613-103 QVPB613-103 NRSA02J-680 NRSA02J-680 NRSA02J-680	VR VR MGR MGR MGR	10K G FLARE 10K R FLARE 68 1/10W 68 1/10W
R52 R53 R54 R55	NRSA02J-221 NRSA02J-221 NRSA02J-221 NRSA02J-392 QVPB614-502	MGR MGR MGR MGR VR	220 1/10W 220 1/10W 220 1/10W 310W 510K B KNEE
R57 R58 R59 R60 R61	NRSA02J-682 QVPB614-502 QVPB614-502 QVPB613-103 NRSA02J-682	MGR VR VR VR MGR	6.8K 1/10W 5.0K G KNEE 5.0K R KNEE 10K ABL 6.8K 1/10W
R62 R63 R64 R65 R66	NRSA02J-823 NRSA02J-153 NRSA02J-333 NRSA02J-221 NRSA02J-221	MGR MGR MGR MGR MGR	82K 1/10W 155K 1/10W 33K 1/10W 220 1/10W 220 1/10W
R67 R68 R69 R70 R71	NRSA02J-221 NRSA02J-153 NRSA02J-153 NRSA02J-153 NRSA02J-562	MGR MGR MGR MGR MGR	220 1/10W 15K 1/10W 15K 1/10W 5.6K 1/10W
R72 R73 R74 R75 R76	NRSAOZJ-562 NRSAOZJ-562 NRSAOZJ-181 NRSAOZJ-181 NRSAOZJ-181	MGR MGR MGR MGR MGR	5.6K 1/10W 180 1/10W 180 1/10W 180 1/10W
R77 R78 R79 R80 R81	NRSAOZJ-181 NRSAOZJ-181 NRSAOZJ-181 NRSAOZJ-123 NRSAOZJ-123	MGR MGR MGR MGR MGR	180 1/10W 180 1/10W 180 1/10W 12K 1/10W 12K 1/10W
R82 R83 R84 R85 R86	NRSA02J-123 NRSA02J-562 NRSA02J-562 NRSA02J-562 QVPB614-102	MGR MGR MGR MGR VR	12K 1/10W 5.6K 1/10W 5.6K 1/10W 5.6K 1/10W 1.0K B GAMMA
R87 R88 R89 R90	QVPB614-102 QVPB614-102 NRSA02J-472 NRSA02J-472 NRSA02J-472	VR VR VGR MGR MGR	1.0K G GAMMA 1.0K R GAMMA 4.7K 1/10W 4.7K 1/10W 4.7K 1/10W
R92 R93 R945 R96	NRSA02J-152 NRSA02J-472 NRSA02J-152 NRSA02J-223 NRSA02J-223	MGR MGR MGR MGR MGR	1.5K 1/10W 4.7K 1/10W 1.5K 1/10W 22K 1/10W 22K 1/10W
R97 R98 R99 R100 R101	GRV141F-1002 GRV141F-1002 NRSA02J-330 NRSA02J-221 NRSA02J-221	MFR MFR MGR MGR MGR	10.0K 1/4W 10.0K 1/10W 1/10W 1/10W 1/10W 1/10W
R102 R103 R104 R105 R107	NRSA02J-221 NRSA02J-392 NRSA02J-392 NRSA02J-392 NRSA02J-471	MGR MGR MGR MGR	20 1/10W 33-19K 1/10W 1/10W 1/10W 1/10W 1/10W
R109 R110 R111	NRSAOZJ-ORO NRSAOZJ-ORO NRSAOZJ-ORO	MGR MGR MGR	0 1/10W 0 1/10W 0 1/10W
C1 C45 C6 C8	QEX41AK-226 QEJ41AM-475 QEJ41AM-475 QEJ41AM-475 QER41AM-476	P.P.P.P.P.P.P.P.P.P.P.P.P.P.P.P.P.P.P.	22 10V 4.7 10V 4.7 10V 4.7 10V 4.7 10V
C9 C10 C11 C12 C13	GETA1AM-227 GER40JM-476 GER40JM-476 GER40JM-476 GEPA0JM-476	E E E E E E E E E E E E E E E E E E E	220 10V 47 6.3V 47 6.3V 47 6.3V
C14 C15 C16 C17 C18	QEPAOJM-476 QEJ41AM-475 QEJ41AM-475 QEJ41AM-475 QEPA1CM-106	NP CAP T CAP T CAP T CAP NP CAP	47 6.3V 4.7 10V 4.7 10V 10 16V
C19 C20 C24 C25 C26	QEPA1CM-106 QEPA1CM-106 QEX41AK-226 QEX41AK-226 QEX41AK-226	NP CAP NP CAP E CAP E CAP	10 16V 222 10V 222 10V

Symbol No.	Part No.	Part Name	Description	Symbol No.	Part No.	Part Name	Description
C27 C28 C29 C30 C31	QEJ41VM-104 QEJ41VM-104 QEJ41VM-104 NCF21EZ-104 NCF21EZ-104	T CAP T CAP T CAP C CAP C CAP	0.10 35V 0.10 35V 0.10 35V 0.10 25V 0.10 25V	● CBM4 ● CBM5 ● CBM6	CBMC4220-00A CBMC4220-00A CBMC4220-00A	GAMMA IN CBM GAMMA IN CBM GAMMA IN CBM	
C32 C334 C35 C36	NCF21EZ-104 QER41AM-476 QEX41AK-226 QEX41AM-476 QER41AM-476	C C C C A P E E C C C A P E E C C A P E E C C A P E E C C A P E E C C A P E E C C A P E E C C A P E E C C A P E E C C A P E E C C A P E E C C A P E E C C A P E E C C A P E E C C A P E E C C A P E E C C A P E E C C A P E E C C A P E E C C A P E E E E E E C C A P E E E E E E E E E E E E E E E E E E	0.10 25V 47 10V 22 10V 47 10V 47 10V	Q1	2\$C2295(B.C)	TRANSISTOR	MATSUSHITA MATSUSHITA
C37 C38 C39 C40	QER40JM-476 NCT03CH-9R0 NCT03CH-9R0 NCT03CH-9R0	ECCCAP CCCAP CCCAP	9.0P 50V 9.0P 50V 9.0P 50V 47 6.3V	Q 2 Q 3 Q 4 Q 5	2\$C2295(B.C) 2\$C2295(B.C) 2\$K198(Q.R) 2\$C2295(B.C) 2\$A1022(B.C)	TRANSISTOR FET TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA
C44 C45	QER40JM-476 NCF21EZ-104 QETA0JM-337	C CAP E CAP	0.10 25V 330 6.3V	96 07 98 69	25K198(Q.R) 25C2295(B.C) 25A1022(B.C) 25C2295(B.C)	FET TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
123	SCV1488-120 SCV1488-120 SCV1488-120	PEAKING COIL PEAKING COIL PEAKING COIL	12 µ 12 µ	R1 R2 R3 R5	NRSAOZJ-824 NRSAOZJ-102 NRSAOZJ-153 NRSAOZJ-103 NRSAOZJ-472	MGR MGR MGR MGR MGR	820K 1/10W 1.0K 1/10W 15K 1/10W 10K 1/10W 4.7K 1/10W
C N 5	SCV0501-001	CONNECTOR	30PIN	R67 R8 R9 R10	NRSAOZJ-102 NRSAOZJ-222 NRSAOZJ-222 NRSAOZJ-681 NRSAOZJ-102	MGR MGR MGR MGR MGR	1.0K 1/10W 2.2K 1/10W 2.2K 1/10W 680 1/10W 1.0K 1/10W
				R11 R12 R13 R14	NRSAO2J-682 NRSAO2J-153 NRSAO2J-152 NRSAO2J-682	MGR MGR MGR MGR	6.8K 1/10W 15K 1/10W 1.5K 1/10W 6.8K 1/10W
				C1 C2	NCT03CH-8R0 NCT03CH-470	C CAP	8-0P 50V 50V
					SCV1210-012	CONNECTOR (CLIP	
• CBM1 • CBM2 • CBM3	CBMC4219-02A	B HI-SHNS CBM G HI-SENS CBM R HI-SENS CBM					
101	RC1496M	ıc					
100000 00000	2\$K198(@.R) 2\$K198(@.R) 2\$K198(@.R) 2\$K198(@.R) 2\$C295(B.C)	FET TRANSISTOR FET FET TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA				
RR	NRSACOZJ - 1332 NRSACOZJ - 1332 NRSACOZJ - 1332 NRSACOZJ - 188	MGR MGR MGR MGR MGR	220 1/10W 22K 1/10W 1.5K 1/10W 5.3K 1/10W 1.8K 1/10W				
97 989 8110 811	NRSA02J-104 NRSA02J-561 NRSA02J-104 NRSA02J-101 NRSA02J-101	MGGR MGGR MGGR MGGR	100K 1/10W 560 1/10W 100K 1/10W 100K 1/10W 100 1/10W				
23456 221116 221116	NRSA02J-332 NRSA02J-221 NRSA02J-222 NRSA02J-562 NRSA02J-333	MGR MGR MGR MGR MGR	3.3K 1/10W 220 1/10W 2.2K 1/10W 5.6K 1/10W 33K 1/10W				# #
R17	NRSA02J-563 NRSA02J-683	MGR MGR	56K 1/10 for "R" 68K 1/10 for "B" Unused for "G"				
R18 R19	NRSA02J-332 NRSA02J-472	MGR MGR	3.3K 1/10W 4.7K 1/10W				
C1	NCT03CH-3R0 SCV1210-012	C CAP	3.0P 50V				
		LEAD)					

7.7 PR 2 board assembly 07 Symbol Description Part Name Part No. No. TOSHIBA TOSHIBA TOSHIBA TOSHIBA JVC IC IC IC FUNCTION MODULE IC1 IC2 IC3 IC4 IC5 2SA1022(B.C) 2SA1022(B.C) 2SA1022(B.C) 2SC2295(B.C) 2SC2295(B.C) Q1 Q2 Q3 Q4 Q5 MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA 96 97 98 910 938 ATIHZUZTAM ATIHZUZTAM ATIHZUZTAM ATIHZUZTAM ATIHZUZTAM 939 940 941 943 044 045 046 047 048 FET TRANSISTOR TRANSISTOR 94501N3 955558 955558 250602(Q.R) 250602(Q.R) 250602(Q.R) 250602(Q.R) 250602(Q.R) 959 960 961 963 963 MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA 964 965 966 967 968 Q69 Q70 Q71 Q79 Q80 MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA ROHM MATSUSHITA HITACHI MATSUSHITA MATSUSHITA DIODE DIODE DIODE %70 820 470 2.2K 1.2K NRSA02J-471 NRSA02J-821 NRSA02J-471 NRSA02J-222 NRSA02J-122 1/10W B GAIN G GAIN R GAIN 1/10W MGR VR VR MG MG 2.2K 1.0K 1.0K 1.0K 1.0K R6 R7 R8 R9 R10 1/10W 1/10W 1/10W 1/10W 1/10W MGR MGR MGR MGR 1.0K 1.0K 1.5K 1.0K 270 R112 R123 R134 R15 3 9K 27K 510 510 510 R16 R17 R18 R20 R21 510 6.8K 5.8K 1.2K 1.2K R 23 R 24 R 26 R 57 R 58 MGR MGR MGR MGR R59 R60 R61 R62 R63 MGR MGR MGR MGR

1/10W B NEGA BLK NEGA BLK NEGA BLK 1/10W 1
1/10W 1/10W 1/10W 1/10W 1/10W 1/10W 1/10W 1/10W 1/10W 1/10W 1/10W 1/10W 1/10W
1/10W 1/10W 1/10W 1/10W 1/10W 1/10W 1/10W 1/10W 1/10W
1/10W 1/10W 1/10W 1/10W 1/10W
8+R 1/10W B-R 1/10W 1/10W
G-R 1/10W R-G B-110W
G-8 1/10W 1/10W 1/10W 1/10W
1/10W 1/10W 1/10W 1/10W 1/10W
1/10W 1/10W 1/10W 1/10W 1/10W
1/10W 1/10W 1/10W 1/10W
1/10W 1/10W B W.CLIP G W.CLIP R W.CLIP
1/10W 1/10W 1/10W 1/10W
1/10W 1/10W 1/10W 1/10W 1/10W

ymbol No.	Part No.	Part Name	Description	Symbol No.	Part No.	Part Name	Description
R159 R160 R161 R162 R163	NRSA02J-471 NRSA02J-681 QVPB614-102 NRSA02J-222 NRSA02J-821	MGR MGR VR MGR MGR	470 1/10W 680 1/10W 1.0K TEST OUT GAIN 2.2K 1/10W 820 1/10W	• CBM1 • CBM2 • CBM3	CBMC4218-00A CBMC4218-00A CBMC4218-00A	W & B CLIP CBM W & B CLIP CBM W & B CLIP CBM	
R164 R165 R166 R167 R168	NRSA02J-123 NRSA02J-472 NRSA02J-472 NRSA02J-392 NRSA02J-102	MGR MGR MGR MGR MGR	12K 1/10W 4.7K 1/10W 4.7K 1/10W 3.9K 1/10W 1.0K 1/10W	Q1 Q2 Q3 Q5	2SK198(Q.R) 2SC2295(B.C) 2SA1022(B.C) 2SA1022(B.C) 2SC2295(B.C)	FET TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
R169 R170 R171 R172 R173	NRSAO2J-560 NRSAO2J-103 NRSAO2J-680 NRSAO2J-560 NRSAO2J-682	MGR MGR MGR MGR MGR	56 1/10W 10K 1/10W 68 1/10W 56 1/10W 6.8K 1/10W	Q6 Q7 Q8 Q9 Q10	2\$C2295(B.C) 2\$C2295(B.C) 2\$A1022(B.C) 2\$C2295(B.C) 2\$C2295(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
C1 C23 C4 C5	QER41AM-476 NCF21EZ-104 QER40JM-476 NCT03CH-101 QER40JM-476	E CAP CAP CCAP E CAP	47 10V 0.10 25V 47 6.3V 100P 50V 47 6.3V	R1 R23 R45	NRSA02J-333 NRSA02J-471 NRSA02J-332 NRSA02J-332 NRSA02J-103	MGR MGR MGR MGR MGR	33K 1/10W 470 1/10W 3.3K 1/10W 3.3K 1/10W 10K 1/10W
C6 C7 C8 C9 C10	QEPA1CM-106 QEPA1CM-106 QEPA1CM-106 QEPA1CM-476 QER41AM-476	NP CAP NP CAP E CAP	10 16V 10 16V 10 16V 47 10V 47 10V	R6 R7 R8 89 R10	NRSA02J-562 NRSA02J-562 NRSA02J-472 NRSA02J-104 NRSA02J-332	MGR MGR NGR MGR MGR	5.6K 1/10W 5.6K 1/10W 4.7K 1/10W 100K 1/10W 3.3K 1/10W
0112 0113 0114 0115	QER41AM-476 QER41EM-106 QER41EM-106 QER41EM-106 QEP41CM-106	E CAAP CAAP CCAAP NP CAAP	47 10V 10 25V 10 25V 10 25V 10 16V	R112 R123 R13	NRSA02J-332 NRSA02J-152 NRSA02J-182 NRSA02J-223	MGR MGR MGR	3.3K 1/10W 1.5K 1/10W 1.8K 1/10W 22K 1/10W
C16 C17 C18 C19 C20	QEPA1CM-106 QEPA1CM-106 QEPA0JM-476 QEPA0JM-476 QEPA0JM-476	NP CAP NP CAP NP CAP NP CAP	10 16V 10 16V 47 6.3V 47 6.3V 47 6.3V		SCV1210-012	CONNECTOR (CLIP	
C21 C22 C23 C24 C25	NCTO3CH-180 QER40JM-107 QER41HM-105 QER41AM-476 QER40JM-476	C C C A P E C C A P E C C A P E C C A P	18P 50V 100 6.3V 1.0 50V 47 10V 47 6.3V				
C26 C27 C28 C29 C30	NCTO3CH-150 QER40JM-476 QAT3120-200 QER41EM-106 QER40JM-476	C CAP E CAP E CAP E CAP	15P 50V 47 6.3V 30P B DELAY 10 25V 47 6.3V				
C31 C32 C334 C35	QER40JM-476 QER40JM-476 QER40JM-476 NCT03CH-560 NCT03CH-470	E CAP E CAP C CAP	47 6.3V 47 6.3V 56P 50V 47P 50V	◆CBM4	CBMC4217-00A	PIX IN CBM	1 1 1 1 1 1 1 1
036 037 038 040	NCTO3CH-680 QER40JM-476 QER40JM-107 NCF21EZ-104 NCF21EZ-104	C CAP E CAP C CAP	68P 50V 170 6.3V 0.10 25V 0.10 25V	IC1	TC40518F	IC	TOSHIBA
DL1 DL2	SCV1684-001 SCV1684-001	DELAY LINE	2 2514	Q1 Q2 Q3 Q4 Q5	2SA1022(8.C) 2SA1022(8.C) 2SA1022(8.C) 2SA1022(8.C) 2SA1022(8.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
SW1 SW2	SCV1682-001 SCV1682-001 SCV1080-003	DIP SWITCH	B DELAY R DELAY MATRIX DN/OFF	06 07 08	2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA
S4 CN4	\$CV1080-002 \$CV0501-001	CONNECTOR	30PIN	105145 RRRRR	NRSA02J-681 NRSA02J-332 NRSA02J-332 NRSA02J-562 NRSA02J-562	MGR MGR MGR MGR MGR	58.95K 1/10W 536K 1/10W 536K 1/10W
				R67 R3 R90 R10	NRSA02J-562 NRSA02J-822 NRSA02J-6222 NRSA02J-822 NRSA02J-822	nga ngga ngga mga mga	55700 K K K K 6000 K K K K K K K K K K K K
				R1123 R1133 R115 R115	NRSA02J-821 NRSA02J-822 NRSA02J-222 NRSA02J-222 NRSA02J-222	MGR MGGR MGGR MGGR MGGR	1//// 1111111 1111111 1111111111111111
				R167 R1189 R20	NRSA02J-222 NRSA02J-104 NRSA02J-393 NRSA02J-393 NRSA02J-393	MORR MOGR MOGR MOGR	200K 1//1100W
				R21 R22 R23 R24	NRSA02J-104 NRSA02J-104 NRSA02J-104 NRSA02J-221	MGR MGR HGR RGR	100K 1/ 10W 100K 1/ 10W 100K 1/ 10W 100K 1/ 10W
					SCV1320-012	CONNECTOR (CLI	F

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Symbol No.	Part No.	Part Name	Description
101	UA733CNE	1 C	
Q1 Q24 Q45 Q6	2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
97 98 99 910 911	2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SK198(Q.R)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR FET	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
012 013 015 016 017	2SA1022(B.C) 2SA1022(B.C) DTC124EK 2SK198(W.R) DTC124EK	TRANSISTOR TRANSISTOR TRANSISTOR FET TRANSISTOR	MATSUSHITA MATSUSHITA ROHM MATSUSHITA ROHM
919 922 922 932 932 932 932 932 932 932 93	25K198(Q.R) 25K198(Q.R) 25C2295(B.C) 25K198(Q.R) 25K198(Q.R)	FET FET TRANSISTOR FET FET	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
9 9 9 9 9 9 9 9 9	2SA1022(B.C) 2SA1022(B.C) 2SA1022(B.C) 2SC2295(B.C) 2SC2295(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
01054 01054 00000	2SC2295(B.C) 2SA1022(B.C) 2SA1022(B.C) 2SC2295(B.C) 2SA1022(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
Q35	2SC2295(B.C)	TRANSISTOR	MATSUSHITA
D1 D2	HSM2765 HSM2765	DIODE	HITACHI
R1 R23 R34 R5	NRSAO2J-561 NRSAO2J-103 NRSAO2J-122 NRSAO2J-471 NRSAO2J-471	MGR MGR MGR MGR MGR	560 1/10W 10K 1/10W 1.2K 1/10W 470 1/10W 470 1/10W
R6 R7 R8 R10	NRSA02J-682 NRSA02J-472 NRSA02J-682 QVPB613-202 NRSA02J-472	MGR MGR MGR VR MGR	6.8K 1/10W 4.7K 1/10W 6.8K 1/10W 2.0K NOISE SLICE 4.7K 1/10W
R11 R12 R13 R14 R15	NRSAO2J-152 NRSAO2J-221 NRSAO2J-102 NRSAO2J-152 NRSAO2J-472	MGR MGR MGR MGR	1.5K 1/10W 220 1/10W 1.0K 1/10W 1.5K 1/10W 4.7K 1/10W
R16 R17 R18 R19 R20	NRSAO2J-101 NRSAO2J-152 NRSAO2J-561 NRSAO2J-472 NRSAO2J-561	MGR MGR MGR MGR	100 1/10W 1.5K 1/10W 560 1/10W 4.7K 1/10W 560 1/10W
NNNNN NRRRR RRRRR	NRSA02J-472 NRSA02J-102 NRSA02J-152 NRSA02J-272 NRSA02J-472	MGR MGR MGR MGR MGR	4.7K 1/10W 1.0K 1/10W 1.5K 1/10W 2.7K 1/10W 4.7K 1/10W
R 207 R 202 R 202 R 203	NRSA02J-682 QVPB613-502 NRSA02J-222 NRSA02J-222 NRSA02J-562	MGR VR MGR MGR MGR	6.8K 1/10W 5.0K V BAL 2.2K 1/10W 2.2K 1/10W 5.6K 1/10W
R333345 R33345	NRSAO2J-122 NRSAO2J-222 QVPB613-202 NRSAO2J-332 NRSAO2J-472	MGR MGR VR MGR MGR	1.2K 1/10W 2.2K 1/10W 2.0K V LEVEL 3.3K 1/10W 4.7K 1/10W
R36 R37 R38 R39 R40	NRSAO2J-333 NRSAO2J-103 NRSAO2J-332 NRSAO2J-272 NRSAO2J-821	MGR MGR MGR MGR	33K 1/10W 10K 1/10W 3-3K 1/10W 2-7K 1/10W 820 1/10W
R41 R42 R43 R46	NRSAO2J-272 NRSAO2J-822 QVPB613-502 NRSAO2J-103 NRSAO2J-103	MGR MGR VR MGR MGR	2.7K 1/10W 8.2K 1/10W 5.0K LEVEL DEPENDENT 10K 1/10W 10K 1/10W
R47 R48 R49 R50 R51	NRSA02J-104	MGR MGR MGR MGR MGR	100M 1/10W 22K 1/10W 100K 1/10W 22K 1/10W 22K 1/10W
R 5 2 R 5 3		MGR MGR	1.0H 1/10W 100 1/10W

Symbol No.	Part No.	Part Name	Description
R54	NRSAO2J-681	MGR	680 1/10W
R55	NRSAO2J-222	MGR	2.2K 1/10W
R57	NRSAO2J-222	MGR	2.2K 1/10W
R58	NRSA02J-103	MGR	10K 1/10W
R59	NRSA02J-103	MGR	10K 1/10W
R60	NRSA02J-472	MGR	4.7K 1/10W
R61	NRSA02J-103	MGR	10K 1/10W
R62	NRSA02J-103	MGR	10K 1/10W
R63	NRSA02J-103	MGR	10K 1/10W
R64	NRSA02J-681	MGR	680 1/10W
R65	NRSA02J-222	MGR	2.2K 1/10W
R66	NRSA02J-223	MGR	2.2K 1/10W
R67	NRSA02J-222	MGR	2.2K 1/10W
R68	QVPB613-202	VR	2.0K H LEVEL
R69	NRSA02J-223	MGR	22K 1/10W
R70	NRSA02J-222	MGR	2.2K 1/10W
R71	NRSA02J-102	MGR	1.0K 1/10W
R72	NRSA02J-102	MGR	1.0K 1/10W
R73	NRSA02J-561	MGR	560 1/10W
R74	NRSA02J-561	MGR	560 1/10W
R75	NRSA02J-222	MGR	2.2K 1/10W
R76	NRSA02J-221	MGR	2.2K 1/10W
R77	NRSA02J-222	MGR	2.2K 1/10W
R78	NRSAO2J-221	MGR	220 1/10W
R79	NRSAO2J-222	MGR	212K 1/10W
R80	NRSAO2J-333	MGR	33K 1/10W
R81	NRSAO2J-682	MGR	6.8K 1/10W
R82	NRSAO2J-391	MGR	390 1/10W
R83 R84 R85 R86 R87	NRSA02J-472 NRSA02J-223 NRSA02J-472 NRSA02J-681 NRSA02J-223	MGR MGR MGR MGR MGR	4.7% 1/10W 22% 1/10W 4.80 1/10W 22% 1/10W
R88	NRSA02J-102	MGR	1.0K 1/10W
R89	NRSA02J-471	MGR	470 1/10W
R90	NRSA02J-222	MGR	2.2K 1/10W
R91	NRSA02J-103	MGR	10K 1/10W
R92	NRSA02J-152	MGR	1.5K 1/10W
R93	NRSA02J-152	MGR	1.5K 1/10W
012345 0000	QER41AM-476 QER41EM-106 QER41EM-106 QER41EM-106 NCT03CH-220	E CAP EE CCAP EE CAP	47 100 100 100 100 100 100 100 100 100 10
C6 C7 C8 C9 C10	QER40JM-476 QER41CM-476 QEJ41AM-106 NCT03CH-101 NCT03CH-100	E CAP T CAP C CAP C CAP	47 6.3V 47 16V 100 10V 100P 50V
C11 C12 C13 C14 C15	QER41AM-476 QEJ41VM-105 NCT03CH-390 NCF21EZ-104 QER41EM-106	E CAP CAP CCAP CCAP E CAP	47 1.0 35V 39P 0.10 25V
C16	NCT03CH-220	CEE C C C C C C C C C C C C C C C C C C	22P 50V
C17	QER40JM-476		47 6.3V
C18	QER41EM-106		10 25V
C19	NCF21EZ-104		0.10 25V
C20	QER40JM-476		47 6.3V
C21 C23 C25 C27	QER40JM-476 QER41EM-106 QEJ41VM-105 QER40JM-476 QER41AM-476	E CAP E CAP E CAP E CAP	47 6.35V 1.0 355V 47 6.33V
C28 C29 C30 C31 C32	QEPAOJM-476 QEPAOJM-476 NCTO3CH-100 NCTO3CH-100 NCF21EZ-104	NP CAP NP CAP C CAP C CAP	47 6.3V 47 6.3V 10P 50V 10P 50V
C34	QEPAOJM-476	NP CAP	47 6.3V
C35	QEPAOJM-476	NP CAP	47 6.3V
C36	NCTO3CH-100	C CAP	10P 50V
C37	NCTO3CH-100	C CAP	10P 50V
C38	QER41AM-476	E CAP	47 10V
C39 C40 C41 C43 C44	QEJ41VM-105 QEJ41VM-105 QEJ41VM-105 QEJ41CM-225 QEJ41CM-225 QEPA1EM-475	T CAP T CAP T CAP T CAP	1.0 35V 35V 35V 1.0 35V 25V
C45 C46	QEPA1EM-475 NCT03CH-270	NP CAP	4.7 27P 25V 50V
L1	SCV0331-100	PEAKING COIL	10 µ
L2	SCV0331-120	PEAKING COIL	12 µ
L3	SCV0331-390	PEAKING COIL	39 µ
L4	SCV0331-2R2	PEAKING COIL	2.2 µ
L5	SCV0331-121	PEAKING COIL	120 µ
DL1	SCV0573-001	DELAY LINE	140 nsec
DL2	SCV0572-001		120 nsec

SCV1227-013 SCV1227-002 SCV1315-004 SCV1315-008 CBMC4224-00A CBMC4224-00A UA733CNS 2SK198(Q.R) NRSA02J-470 NRSA02J-470 NRSA02J-104 NRSA02J-680	CONNECTOR CONNECTOR AGC AMP CBM AGC AMP CBM IC FET MGR MGR	13PIN 2PIN 4PIN (TO CC2 board) 8PIN (TO CC2 board) MATSUSHITA 47 1/10W
CBMC4224-00A CBMC4224-00A UA733CNS 2SK198(Q.R) NRSA02J-470 NRSA02J-470 NRSA02J-224 NRSA02J-680	AGC AMP CBM AGC AMP CBM IC FET MGR MGR	2PIN 4PIN (TO CC2 board) 8PIN (TO CC2 board)
CBMC4224-00A CBMC4224-00A UA733CNS 2SK198(Q.R) NRSA02J-470 NRSA02J-470 NRSA02J-224 NRSA02J-680	AGC AMP CBM AGC AMP CBM IC FET MGR MGR	MATSUSHITA
CBMC4224-00A CBMC4224-00A UA733CNS 2SK198 (Q.R) NRSA02J-470 NRSA02J-470 NRSA02J-224 NRSA02J-2680	AGC AMP CBM AGC AMP CBM IC FET MGR MGR	MATSUSHITA
UA733CNS 2SK198(Q.R) NRSAO2J-470 NRSAO2J-270 NRSAO2J-270 NRSAO2J-224 NRSAO2J-680	AGC AMP CBM	
UA733CNS 2SK198(Q.R) NRSAO2J-470 NRSAO2J-270 NRSAO2J-270 NRSAO2J-224 NRSAO2J-680	AGC AMP CBM	
UA733CNS 2SK198(Q.R) NRSAO2J-470 NRSAO2J-270 NRSAO2J-270 NRSAO2J-224 NRSAO2J-680	AGC AMP CBM	
25K198(Q.R) NRSAO2J-470 NRSAO2J-224 NRSAO2J-104 NRSAO2J-680	FET MGR MGR	
NRSAO2J-470 NRSAO2J-424 NRSAO2J-224 NRSAO2J-104 NRSAO2J-680	MGR MGR	
	MGR	47 1/10W
	MGR MGR MGR	47 1/10W 47 1/10W 220K 1/10W 100K 1/10W 68 1/10W
NRSAOZJ-101 NRSAOZJ-104 NRSAOZJ-472 NRSAOZJ-472	MGR MGR MGR MGR	100 1/10W 100K 1/10W 4.7K 1/10W 4.7K 1/10W
NCF21EZ-104	C CAP	0.10 25V
SCV1210-006	CONNECTOR	
CBMC4221-00A	AGC DET CBM	
NJMO62M	10	JRC
25K198(Q.R) 25K198(Q.R) 25K198(Q.R) 25K198(Q.R) 25K198(Q.R)	FEET FEET FEET	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
25K19B(Q.R)	FET	MATSUSHITA
NRSAO2J-103 NRSAO2J-563 NRSAO2J-563 NRSAO2J-563 NRSAO2J-103	MGR MGR MGR MGR	10K 1/10W 56K 1/10W 56K 1/10W 56K 1/10W 10K 1/10W
NRSA02J-333 NRSA02J-333 NRSA02J-333	MGR MGR MGR	33K 1/10W 33K 1/10W 33K 1/10W
SCV1210-012	CONNECTOR (CLIF	
	NCF21EZ-104 SCV1210-006 CBMC4221-00A NJM062M NJM062M NSK198(Q.R) NSK198(Q.R) NSK198(Q.R) NSK198(Q.R) NSK198(Q.R) NSSA002J-15663 NRSA002J-5663 NRSA002J-5663 NRSA002J-3333	NRSA02J-472 MGR NRSA02J-472 MGR NCF21EZ-104 C CAP SCV1210-006 CDNNECTOR CBMC4221-00A AGC DET CBM NJM062M IC 2SK198(Q.R) FET 2SK198(Q.R) FET 2SK198(Q.R) FET 2SK198(Q.R) FET 2SK198(Q.R) FET 2SK198(Q.R) FET NRSA02J-663 MGR

Symbol No.	Part No.	Part Name	Description
CBM4	CBMC4225-00A	H CONTOUR CBM	
Q1 Q2 Q3 Q4	2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SA1022(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
D1	MA15ZA	DIODE	MATSUSHITA
R120145	NRSA02J-272 NRSA02J-182 NRSA02J-272 NRSA02J-272 NRSA02J-681	MGR MGR MGR MGR MGR	2.7K 1/10W 1.8K 1/10W 2.7K 1/10W 2.7K 1/10W 680 1/10W
R6 R7 R8 R9 R10	NRSA02J-681 NRSA02J-271 NRSA02J-103 NRSA02J-681 NRSA02J-561	MGR MGR MGR MGR MGR	680 1/10W 170 1/10W 10K 1/10W 680 1/10W 560 1/10W
R11 R12 R13 R14	NRSA02J-821 NRSA02J-103 NRSA02J-223 NRSA02J-821	MGR MGR MGR MGR	320 1/10W 10K 1/10W 22K 1/10W 820 1/10W
Ci	NCF21EZ-104	C CAP	0.10 250
	SCV1210-006	CONNECTOR	

7.10 SE (NTSC) board assembly 10-N

7 Q	CC2 board assembly	ര്യ	09
7.9	CCZ Doard assembly	0 3	

Symbol No.	Part No.	Part Name	Description	Symbol No.	Part No.	Part Name	Description
IC1 Q1 Q2	RC1496M 2SC2295(B.C) 2SD602(G.R)	TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA	IC1 IC2 IC3 IC4 IC5	SCV0270-001 AN614 SCV0322-002 TC40H004F	FUNCTION MODULE IC FUNCTION MODULE IC	JVC MATSUSHITA MATSUSHITA JVC TOSHIBA
Q3 Q4 Q5	25C2480(S.T) 25C2480(S.T) 25C2480(S.T)	TRANSISTOR TRANSISTOR	MATSUSHITA HATSUSHITA MATSUSHITA	IC6 IC7 IC8	TC50H000F TC40H000F TC4053BF	1C 1C 1C	TOSHIBA TOSHIBA TOSHIBA
96 97 98 99 910	2SA1022(B.C) 2SD602(G.R) 2SC2480(S.T) 2SC2480(S.T) 2SC2480(S.T) 2SA1022(B.C)	TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA	012 023 034 05	2SA1022(8.C) 2SC2295(8.C) 2SA1022(8.C) 2SC2295(8.C) 2SC2295(8.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
R R R R R R R R R R R R R	NRSAO2J-472 NRSAO2J-221 NRSAO2J-103 NRSAO2J-471 NRSAO2J-472		4.7K 1/10W 220 1/10W 10K 1/10W 470 1/10W 2.2K 1/10W	96 97 98 99 910	2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SA1022(B.C) 2SA1022(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
R6 R7 R8 R9 R10	NRSA02J-471 NRSA02J-682 NRSA02J-153 NRSA02J-123 NRSA02J-471	MGR	470 1/10W 6.8K 1/10W 15K 1/10W 12K 1/10W 470 1/10W	911 912 913 914 915	2SA1022(B.C) 2SC2295(B.C) 2SA1022(B.C) 2SC2295(B.C) DTC124EK	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA ROHM
R112345	NRSA02J-223 NRSA02J-102 NRSA02J-4R7 NRSA02J-4R7 NRSA02J-100	MGR MGR MGR MGR MGR	22K 1/10W 1.0K 1/10W 4.7 1/10W 4.7 1/10W 10 1/10W	916 917 918 919 920	2SC2406(S.T) 2SD602(Q.R) 2SC2295(B.C) 2SD602(Q.R) 2SC2295(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
R16 R17 R18 R19 R20	NRSA02J-560 NRSA02J-123 NRSA02J-153 NRSA02J-682 NRSA02J-153	MGR MGR MGR MGR	56 1/10W 12K 1/10W 15K 1/10W 6.8K 1/10W 15K 1/10W	921 9225 9227 927	25K198(Q.R) 25A1022(8.C) 25K198(Q.R) 25A1022(8.C) 25C2295(8.C)	FET TRANSISTOR FET TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
RRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR	NRSA02J-102 NRSA02J-4R7 NRSA02J-4R7 NRSA02J-100 NRSA02J-560	MGR MGR MGR MGR MGR	1.0K 1/10W 4.7 1/10W 4.7 1/10W 10 1/10W 56 1/10W	928 929 930 931 932	2SC2295(B.C) 2SK198(Q.R) 2SC2295(B.C) DTC124EK 2SC2295(B.C)	TRANSISTOR FET TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA ROHM MATSUSHITA
R26	NRSA02J-102 NCF21EZ-104 NCF03CH-330	MGR C CAP C CAP C CAP	1.0K 1/10W 0.10 25V 33P 50V	D1 D2 D3 D4 D5	MA152A MA152A SVC321(A) MA153 SVC321(A)	DIODE DIODE VARI CAP DIODE DIODE VARI CAP DIODE	MATSUSHITA MATSUSHITA SANYO MATSUSHITA SANYO
C 4 C 5	QEJ41AM-106 NCF21EZ-104	T CAP	10 0.10 25V	06 07 08	MA152A HZ4ALL MA152A	DIODE ZENER DIODE DIODE	MATSUSHITA HITACHI MATSUSHITA
C6 C7 C8	NCF21EZ-104 NCF21EZ-104 QEJ41CM-106 SCV1333-001 SCV1334-001	C CAP C CAP T CAP DELAY LINE DELAY LINE	0.10 25V 0.10 25V 10 16V 2H DELAY (for NTSC) 2H DELAY (for PAL)	RRRRR	NRSA02J-222 QVP8614-202 NRSA02J-222 NRSA02J-152 NRSA02J-222	MGR VR MGR MGR MGR	2.2K 1/10W 2.0K R-Y DUT GAIN 2.2K 1/10W 2.2K 1/10W 2.2K 1/10W
	SCV1314-004 SCV1314-008	CONNECTOR	4PIN 8PIN	R6 R7 R8 R9 R10	NRSA02J-392 QVPB614-202 NRSA02J-272 NRSA02J-182 NRSA02J-222	MGR VR MGR MGR MGR	3.9K 1/10W 2.0K B-Y DUT GAIN 2.7K 1/10W 2.2K 1/10W
			:	R11 R12 R13 R14 R15	NRSA02J-152 NRSA02J-332 NRSA02J-561 NRSA02J-274 NRSA02J-473	MGR MGR MGR MGR MGR	1.5K 1/10W 3.3K 1/10W 5.00 1/10W 270K 1/10W 47K 1/10W
				R16 R17 R18 R19 R20	QVP8614-502 NRSA02J-472 NRSA02J-681 QVP8614-501 NRSA02J-681	VR MGR MGR VR MGR	5.0K SYNC LEVEL 4.7K 1/10W 680 1/10W 500 MASTER Y LEVEL 680 1/10W
				R21 R22 R23 R25 R25	NRSA02J-223 NRSA02J-123 NRSA02J-471 NRSA02J-101 NRSA02J-101	MGR MGR MGR MGR MGR	1/10W 1/10W 1/10W 1/10W 1/10W
				R26 R27 R28 R29 R30	NRSA02J-472 QVPB613-202 NRSA02J-681 NRSA02J-102 NRSA02J-102	MGR VR MGR MGR MGR	4.7K 1/10W 2.0K Y1 LEVEL 680 1/10W 1.0K 1/10W
				R31 R32 R33 R34 R35	NRSA02J-102 NRSA02J-122 NRSA02J-182 NRSA02J-153 NRSA02J-243	MGR MGR MGR MGR MGR	1.0K 1/10W 1.2K 1/10W 1.8K 1/10W 15K 1/10W 24K 1/10W
				R36 R37 R38 R39 R40	QVP8613-202 NRSA02J-122 NRSA02J-122 NRSA02J-681 NRSA02J-392	VR MGR MGR MGR MGR	2.0K Y2 LEVL 1.2K 1/10W 1.2K 1/10W 680 1/10W 3.9K 1/10W
				R41	NRSAOZJ-393	MGR	39K 1/10W

Symbol	Part No.	Part Name	Description	Symbol No.	Part No.	Part Name	Description
No. R42	NRSA02J-123	MGR	12K 1/10W		QER41AM-476 QER41AM-476	E CAP E CAP E CAP	47 10V 47 10V
R43 R44 R45	NRSA02J-822 NRSA02J-822 NRSA02J-104	MGR MGR MGR	100K 1/10W	CCCCCC	QER41AM-476 QER40JM-476 QER41AM-476	E CAP	47 10V 47 6.3V 47 10V
R46 R47 R48 R49 R50	NRSA02J-332 NRSA02J-681 NRSA02J-122 NRSA02J-153 NRSA02J-103	MGR MGR MGR MGR MGR	3.3K 1/10W 680 1/10W 1.2K 1/10W 15K 1/10W 10K 1/10W	C6 C7 C8 C9 C10	QER40JM-476 NCT03CH-560 QER41AM-476 QEP40JM-476 QER41EM-106	E CAP C CAP E CAP NP CAP E CAP	47 6.3V 56P 50V 47 10V 47 6.3V 10 25V
RRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR	NRSAO2J-122 NRSAO2J-102 NRSAO2J-822 NRSAO2J-101 NRSAO2J-2R2	MGR MGR MGR MGR MGR	1.2K 1/10W 1.0K 1/10W 8.2K 1/10W 100 1/10W 2.2 1/10W	C12 C13 C14 C15 C16	QER41AM-476 NC821HK-272 NCT03CH-561 QEJ41VM-684 QER41AM-476	E CAP C CAP C CAP T CAP E CAP	47 10V 2700P 50V 560P 50V 0.68 35V 47 10V
R56 R57 R58 R59 R60	NRSAO2J-2R2 NRSAO2J-560 NRSAO2J-562 NRSAO2J-103 NRSAO2J-472	MGR MGR MGR MGR MGR	2.2 1/10W 56 1/10W 5.6K 1/10W 10K 1/10W 4.7K 1/10W	C17 C18 C19 C20 C21	NCF21HZ-103 NCF21HZ-103 NCF21EZ-104 QER41EM-106 QER41AM-476	C CAP C C CAP E C CAP	0.010 500V 0.010 500V 0.10 205V 10 47 100V
R612 R633 R65 R65	NRSA02J-392 NRSA02J-392 NRSA02J-105 NRSA02J-223 NRSA02J-101	MGR MGR MGR MGR MGR	3.9K 1/10W 3.9K 1/10W 1.0M 1/10W 22K 1/10W 100 1/10W	C224 C2225 CC227	NCFZ1EZ-104 QER40JM-476 QEJ41VM-684 QER40JM-476 NCFZ1HZ-103	C C A P C C A	0.10 25V 47 6.35V 0.68 35V 0.010 50V
R66 R67 R68 R69 R70	NRSA02J-472 NRSA02J-472 NRSA02J-182 NRSA02J-472 NRSA02J-151	MGR MGR MGR MGR MGR	4.7K 1/10W 4.7K 1/10W 1.8K 1/10W 1.7K 1/10W 150 1/10W	C C C C C C C C C C C C C C C C C C C	NCF21HZ-103 NCF21EZ-104 NCT03CH-560 NCT03CH-101 NCT03CH-101	G C C C C C C C C C C C C C C C C C C C	0.010 50V 0.10 50V 0.60 50V 1000P 50V
R73 R74 R75 R76 R77	QVPB613-103 NRSA02J-123 NRSA02J-392 NRSA02J-105 NRSA02J-223	VR MGR MGR MGR MGR	10K BURST PHASE 12K 1/10W 3.9K 1/10W 1.0M 1/10W 22K 1/10W	C334 C335 C37	NCT03CH-151 QER41EM-106 QER41EM-106 NCT03CH-151 QER40JM-476	CEECCE	150P 50V 100 255V 1150P 500V 47 6.3V
R78 R79 R80 R81 R82	NRSAO2J-102 NRSAO2J-102 QVPB614-501 NRSAO2J-561 NRSAO2J-223	MGR MGR VR MGR MGR	1.0K 1/10W 1.0K 1/10W 500 CHROMA 560 1/10W 22K 1/10W	C334012	QEJ41AM-106 NCT03CH-220 NCF21EZ-104 NCT03CH-151 QAT3120-200	T CAP C CAP C CAP TR CAP	10V 20V 100V 100V 100V 100V 100V 100V 10
R83 R84 R85 R86 R87	NRSAO2J-103 NRSAO2J-101 QVPB613-202 NRSAO2J-102 NRSAO2J-392	MGR MGR VR MGR MGR	10K 1/10W 100 1/10W 2.0K CHROMA DUT LEVEL 1.0K 1/10W 3.9K 1/10W	C43 C445 C467	QCTO5UJ-100 NCF21HZ-103 NCF21HZ-103 QEJ41AM-106 NCF21HZ-103	C C C A P C C C A A P C C C A A P C C A A P	10P NOV 0:010 NOV 0:010 100V
R88 R89 R90 R91 R92	QVP8614-102 QVP8614-102 NRSA02J-220 NRSA02J-220 NRSA02J-222	VR VR MGR MGR MGR	1.0K C.BAL 1.0K C.BAL 22 1/10W 22 1/10W 2.2K 1/10W	C48 C49 C551 C552	NCTO3CH-220 NCTO3CH-101 QAT3120-200 NCTO3CH-270 NCF21EZ-104	C CAP CCAP TR CAP C CAP	22P 50V 100P 50V H.LOCK 27P 50V 0.10 25V
R93 R94 R95 R96 R97	NRSA02J-471 QVPB613-501 NRSA02J-222 NRSA02J-222 NRSA02J-223	MGR VR MGR MGR MGR	470 1/10W 500 QUAD 2.2K 1/10W 2.2K 1/10W 2.2K 1/10W	C534 C555 C556 C57	NCF21EZ-104 QER40JM-476 QER41EM-106 QER41AM-476 QER40JM-476	CEEEE	0.10 25V 17 6.35V 10 255V 17 100V
R98 R99 R100 R100	NRSA02J-102	MGR MGR MGR MGR MGR	4.7K 1/10W 6.8K 1/10W 10K 1/10W 1.0K 1/10W 2.2 1/10W	C58 C59 C60 C61 C62	NCTO3CH-820 QER41AM-476 NCTO3CH-3RO QEJ41AM-106 NCTO3CH-221	C C C C C C C C C C C C C C C C C C C	877 OP NOVY
R103 R104 R105 R105	NRSAOZJ-104 NRSAOZJ-822 NRSAOZJ-472	MGR MGR MGR MGR MGR	100K 1/10W 100K 1/10W 8.2K 1/10W 4.7K 1/10W 1.0K 1/10W	C63 C64 C65 C66 C67	NCT03CH-121 NCF21HZ-103 QEJ41VM-105 NCT03CH-470 NCT03CH-5R0	C C C C C C C C C C C C C C C C C C C	10.000 P
R10 R10 R11 R11	NRSA02J-102	MGR MGR VR MGR	1.0K 1/10W 1.0K 1/10W 5.0K BURST LEVEL 3.9K 1/10W	C68	NCT03CH-5R0	C CAP	5.0P 50V
R11 R11 R11	2 NRSA02J-104	MGR MGR MGR	100K 1/10W 82K 1/10W 100K 1/10W	123 145	SCV0331-4R7 SCV0331-100 SCV0331-220 SCV0331-220 SCV0331-820	PEAKING COIL PEAKING COIL PEAKING COIL PEAKING COIL	4.7 # H 1021 # H 2022 # H 2022 # H
R11 R11 R11	5 NRSAOZJ-104 NRSAOZJ-101 NRSAOZJ-104	MGR MGR MGR	100K 1/10W 100 1/10W 100K 1/10W	L6 L7	SCV0983-500 SCV1488-121	COIL PEAKING COIL	50 # H 120 # H
R11 R11 R12 R12	0 NRSA02J-223 1 QVPB613-202	MGR MGR MGR VR	82K 1/10W 8.2K 1/10W 22K 1/10W 2.0K R-Y GAIN 3.3K 1/10W	DL1	SCV0639-001	DELAY LIME	0.3 µse
R12 R12 R12	2 NRSA02J-332 3 NRSA02J-104 4 NRSA02J-332	MGR MGR MGR	100K 1/10W 3.3K 1/10W	X1 X2	SCV0347-002 SCV0347-002	CRYSTAL	Sheet SC4111 100 1
R12 R12	5 NRSA02J-223 6 NRSA02J-682 7 NRSA02J-222	MGR MGR MGR	2.2K 1/10W	CN3	SCV0501-001	CONNECTOR	30PIN
R12 R12 R13 R13 R13	1 NRSA02J-273	VR MGR MGR MGR MGR	2_OK INT SC FINE 27K 1/10W 27K 1/10W 10K 1/10W 390 1/10W				
■13	3 NRSA02J-750	MGR	75 1/10W				

S1 T1	SCV0494-004 SCV1392-001 SCV0171-001	CONNECTOR SHORT PIN TRANSFORMER	}INT SC COARSE
T1			
			1
•свм1	CBMC4229-N0A	R-Y (N) CBM	
9123	2SC2295(B.C) 2SA1022(B.C) 2SA1022(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA
12346 RRRRR	NRSAO2J-162 NRSAO2J-152 NRSAO2J-152 NRSAO2J-182 NRSAO2J-182	MGR MGR MGR MGR MGR	1.0K 1/10W 1.8K 1/10W 1.5K 1/10W 2.5K 1/10W 1.8K 1/10W
R4 R6 R7 R8	NRSAOZJ - 182 NRSAOZJ - 182 NRSAOZJ - 182 NRSAOZJ - 562	MGR MGR	1.8K 1/10W 1.8K 1/10W 5.6K 1/10W
R8 C1 C2	NRSA02J-562 NCT03CH-121 NCT03CH-560	C CAP	120P 50V 56P 50V
C2	NCT03CH-560 SCV1210-006	CONNECTOR	56P 50V
●CBM2	CBMC4229-N1A	B-Y (N) CBM	
900 900	25C2295(B.C) 25A1022(B.C) 25A1022(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA
PRRRR	NRSAO2J-10Z NRSAO2J-182 NRSAO2J-472 NRSAO2J-332 NRSAO2J-682	MGR MGR MGR MGR	1.0K 1/10W 1.8K 1/10W 4.7K 1/10W 3.3K 1/10W 6.8K 1/10W
R 678	NRSAO2J-682 NRSAO2J-182 NRSAO2J-152 NRSAO2J-562	MGR	1.8K 1/10W 1.8K 1/10W 1.5K 1/10W 5.6K 1/10W
		MGR MGR	
C 1 C 2	NCTO3CH-121 NCTO3CH-560	C CAP C CAP CONNECTOR	120P 50V 56P 50V
	3071210-000		

No.	Part No.	Part Name	Description
свм3		SC SHIFT CBM	
Q1 Q2 Q3	2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA
R1 R2 R3 R4	NRSA02J-682 NRSA02J-273 NRSA02J-103 NRSA02J-681 NRSA02J-681	MGR MGR MGR MGR MGR	6.8K 1/10W 27K 1/10W 10K 1/10W 630 1/10W 630 1/10W
R6 R7 R8 R9 R10	NRSA02J-561 NRSA02J-681 NRSA02J-681 NRSA02J-561 NRSA02J-273	MGR MGR MGR MGR MGR	560 1/10W 680 1/10W 560 1/10W 27K 1/10W
R11 R12 R13	NRSA02J-103 NRSA02J-681 NRSA02J-471	MGR MGR MGR	10K 1/10W 680 1/10W 470 1/10W
C1 CC3 CC5 C67	NCF21HZ-103 NCT03CH-220 NCF21HZ-103 NCT03CH-101 NCT03CH-101 NCT03CH-101 NCF21HZ-103 NCF21HZ-103 NCT03CH-560	C C C A P C C C C A P C C C C A P C C A P C C A P C C A P C C A P C C C C	0.010 50V 0.010 50V 1000P 50V 1000P 50V
C7	SCV1210-012	C CAP CONNECTOR (CLIP	
• ZEBF	RA board NJM319M TC4053BF	īč	JRC TOSHIBA
Q1 Q23 Q3 Q5	2\$C2295(8.C) 2\$C2295(8.C) 2\$C2295(8.C) 2\$C2295(8.C) 2\$C2295(8.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
Q6 R1	DTC124EK	TRANSISTOR	27K 1/10W
R23 R45 R5	NRSA02J-273 NRSA02J-681 NRSA02J-102 NRSA02J-123 QVPC404-502	MGR MGR MGR VR	27K 1/10W 680 1/10W 1.0K 1/10W 12K 1/10W 5.0K ZEBRA SET
	NRSA02J-104 NRSA02J-103 NRSA02J-183 NRSA02J-562 NRSA02J-183	MGR MGR MGR	100K 1/10W 10K 1/110W 186K 1/110W 186K 1/110W
R6 R7 R8 R9 R10		MUK	
R10 R11 R12 R13 R14 R15	NRSA02J-562 NRSA02J-103 NRSA02J-183 NRSA02J-332 NRSA02J-682	MGR MGR MGR MGR MGR	5.6K 1/10W 10K 1/10W 18K 1/10W 5.3K 1/10W 6.8K 1/10W
810	NRSA02J-562 NRSA02J-103 NRSA02J-183 NRSA02J-332 NRSA02J-682	MGR MGR MGR	
R10 R11 R12 R13 R14 R15	NRSA02J-562 NRSA02J-103 NRSA02J-183 NRSA02J-332 NRSA02J-682	MGR MGR MGR MGR MGR MGR MGR	5.6K 1/10W 10K 1/10W 18K 1/10W 5.3K 1/10W 6.8K 1/10W

7.10 SE (PAL) board assembly 10-P 10

ymbol No.	Part No.	Part Name	Description	Symbol No.	Part No.	Part Name	Description
IC1 IC2 IC3 IC4 IC5	SCV0270-001 AN614 AN614 IC4053BF TC4053BF	FUNCTION MODULE IC IC IC IC IC	JVC MATSUSHITA MATSUSHITA TOSHIBA TOSHIBA	R31 R32 R33 R34 R35	NRSAO2J-102 NRSAO2J-182 NRSAO2J-153 NRSAO2J-243 QVPB613-202	MGR MGR MGR VR	1.0K 1/10W 1.8K 1/10W 15K 1/10W 24K 1/10W 2.K Y2 LEVEL
IC6 IC7 IC8 IC9 IC10	SCV0322-002 TC40H000F TC40H000F TC40H000F TC4053BF	FUNCTION MODULE IC IC IC IC IC	JVC TOSHIBA TOSHIBA TOSHIBA TOSHIBA	R36 R37 R38 R39 R40	NRSAO2J-182 NRSAO2J-681 NRSAO2J-392 NRSAO2J-393 NRSAO2J-123	MGR MGR MGR MGR MGR	1.8K 1/10W 680 1/10W 3.9K 1/10W 3.9K 1/10W 12K 1/10W
I C 11 I C 12 I C 13	AN614 AN614 SN74LS93N	IC	MATSUSHITA MATSUSHITA TEXAS	R41 R42 R43 R44 R45	NRSAO2J-822 NRSAO2J-822 NRSAO2J-104 NRSAO2J-332 NRSAO2J-332	MGR MGR MGR MGR MGR	8.2K 1/10W 8.2K 1/10W 100K 1/10W 3.3K 1/10W 3.3K 1/10W
G1 G2 G3 G45	2SA1022(B.C) 2SC2295(B.C) 2SA1022(B.C) 2SC2295(B.C) 2SC2295(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA	R46 R47 R48 R49 R50	NRSA02J-102 NRSA02J-332 NRSA02J-222 NRSA02J-122 NRSA02J-101	MGR MGR MGR MGR MGR	1.0K 1/10W 3.3K 1/10W 2.2K 1/10W 1.2K 1/10W
Q6 Q7 Q8 Q9 Q10	2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SA1022(B.C) 2SA1022(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA	R51 R52 R53 R55	NRSAO2J-332 NRSAO2J-102 NRSAO2J-122 NRSAO2J-122 NRSAO2J-681	MGR MGR MGR MGR MGR	3.3K 1/10W 1.0K 1/10W 1.2K 1/10W 1.2K 1/10W 680 1/10W
Q11 Q12 Q13 Q14 Q15	2SA1022(B.C) 2SC2295(B.C) 2SA1022(B.C) 2SC2295(B.C) DTC124EK	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA ROHM	R56 R57 R58 R59 R60	NRSA02J-103 NRSA02J-103 QVPB613-202 NRSA02J-105 NRSA02J-223	MGR MGR VR MGR MGR	10K 1/10W 15K 1/10W 2.0K R-Y GAIN 1/10W 22K 1/10W
Q16 Q17 Q18 Q19 Q20	2SC2406(S.T) 2SC2295(B.C) DTC124EK 2SA1022(B.C) 2SK198(Q.R)	TRANSISTOR TRANSISTOR TRANSISTER TRANSISTER TRANSISTOR FET	MATSUSHITA MATSUSHITA ROHM MATSUSHITA MATSUSHITA	R61 R62 R63 R64 R65	NRSAOZJ-101 NRSAOZJ-2R2 NRSAOZJ-2R2 NRSAOZJ-2R2 NRSAOZJ-2R2 NRSAOZJ-560	MGR MGR MGR MGR MGR	1/10W 1/10W 1/10W 1/10W 1/10W
921 922 922 922 922 922 922	2SD602(Q.R) 2SC2295(B.C) 2SK198(Q.R) 2SK198(Q.R) 2SA1022(B.C) 2SC2295(B.C)	TRANSISTOR TRANSISTOR FET TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA	R66 R67 R68 R69 R70	NRSA02J-562 NRSA02J-122 NRSA02J-472 QVP8613-103 NRSA02J-123	MGR MGR MGR VR MGR	5.6K 1/10W 1.2K 1/10W 4.7K 1/10W 10K BURST PHASE 12K 1/10W
Q27 Q28 Q29 Q31	25C2295(B.C) 25C2295(B.C) 25C2295(B.C) 25K198(Q.R) 25C2295(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR FET TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA	R71 R72 R73 R74 R75	NRSA02J-392 NRSA02J-105 NRSA02J-223 NRSA02J-102 NRSA02J-102	MGR MGR MGR MGR MGR	3.9K 1/10W 1.0M 1/10W 22K 1/10W 1.0K 1/10W 1.0K 1/10W
93345 93345 9336 9336	DTC124EK 2SC2295(B.C) 2SC2295(B.C) 2SB710(Q.R) 2SC2295(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	ROHM MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA	R76 R77 R78 R79 R80	GVPB614-501 NRSA02J-561 NRSA02J-123 NRSA02J-153 NRSA02J-101	VR MGR MGR MGR MGR	500 CHROMA 560 1/10W 12K 1/10W 15K 1/10W 100 1/10W
Q37 Q38	2SA1022(B.C) 2SA1022(B.C) MA152A	TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA	R812 R833 R84 R85	QVP8613-202 NRSA02J-102 NRSA02J-392 NRSA02J-220 NRSA02J-220	VR MGR MGR MGR MGR	2.0K CHROMA GU 1.0K 1/10W 3.9K 1/10W 22 1/10W 22 1/10W
123345 68	MA152A SVC321(A) MA153 SVC321(A) MA152A	DIODE VARI CAP DIODE DIODE VARI CAP DIODE	SANYO MATSUSHITA SANYO MATSUSHITA	R86 R87 R88 R89	NRSA02J-222 QVPB614-102 QVPB614-102 QVPB614-102 NRSA02J-681	MGR VR VR VR MGR	2.2K 1/10W 1.0K B-Y C.BAL 1.0K R-Y C.BAL 1.0K R-Y C.BAL 1/10W
R1 R2 R3	HZ4ALL QVPB613-202 NRSA02J-222 NRSA02J-222 NRSA02J-152	ZENER DIODE VR MGR MGR MGR	HITACHI 2.0K R-Y GAIN 2.2K 1/10W 2.2K 1/10W	R91 R92 R93 R94 R95	NRSA02J-681 NRSA02J-103 NRSA02J-223 NRSA02J-102 NRSA02J-822	MGR MGR MGR MGR MGR	680 1/1 0W 102K 1/1 0W 122K 1/1 0W 11.2K 1/1 0W
R4 R5 R6 R7 R8 R9	NRSAO2J - 222 NRSAO2J - 2322 NRSAO2J - 2372 NRSAO2J - 2372 NRSAO2J - 282	MGR VR MGR MGR MGR	1.5K 1/10W 2.2K 1/10W 2.0K B-Y GAIN 3.3K 1/10W 2.7K 1/10W 1.8K 1/10W	R96 R97 R98 R99 R100	NRSA02J-471 QVPB613-501 NRSA02J-102 NRSA02J-222 NRSA02J-223	MGR VR MGR MGR MGR	470 1/10W 500K 1/10W 200K 1/10W 200K 1/10W
R10 R11234 R134	NRSAO2J-222 NRSAO2J-152 NRSAO2J-332 NRSAO2J-561 NRSAO2J-123	MG R MG R MG R MG G R MG G R	1.5K 1/10W 3.3K 1/10W 3.3K 1/10W 12K 1/10W	R101 R102 R103 R104 R105	NRSA02J-682 NRSA02J-103 NRSA02J-104	MGR MGR MGR MGR MGR	4.7K 1/10W 6.8K 1/10W 10K 1/10W 100K 1/10W 22K 1/10W
R15 R16 R17 R18 R19	NRSA02J-472 QVPB614-502 NRSA02J-681 QVPB614-501 NRSA02J-681	MGR VR MGR VR MGR	4.7K 1/10W 5.0K SYNC LEVEL 680 1/10W 500 Y LEVEL 680 1/10W	R106 R108 R108 R108	NRSA02J-104 NRSA02J-103 NRSA02J-103 NRSA02J-472	MGR MGR MGR MGR MGR	100K 1/10W 100K 1/10W 10K 1/10W 10K 1/10W
R20 R21 R22 R23 R24	NRSA02J-223 NRSA02J-123 NRSA02J-471 NRSA02J-101 NRSA02J-101	MGR MGR MGR MGR MGR	12K 1/10W 470 1/10W 100 1/10W 100 1/10W	R111 R111 R111 R111	2 NRSA02J-102 3 NRSA02J-102	MGR MGR MGR MGR MGR	3.3K 1/10W 11.0K 1/110W 2.9K 1/110W 10K 1/110W
R25 R26 R27 R28 R29	NRSA02J-151 QVPB613-202 NRSA02J-681 NRSA02J-102	MGR VR MGR MGR MGR MGR	150 1/10W 2.0K Y1 LEVEL 680 1/10W 1.0K 1/10W 1.0K 1/10W 1.0K 1/10W	R111 R111 R111 R12	7 NRSAO2J-104 8 NRSAO2J-104 9 NRSAO2J-823	MGR MGR MGR MGR MGR	100K 1/10W 100K 1/10W 100K 1/10W 82K 1/110W

Symbol No.	Part No.	Part Name	Description
R122 R1223 R1224 R1225	NRSA02J-222 NRSA02J-104 NRSA02J-823 NRSA02J-823 NRSA02J-103	MGR MGR MGR MGR MGR	2.2K 1/10W 100K 1/10W 82K 1/10W 82K 1/10W 10K 1/10W
R126 R127 R128 R129 R130	NRSA02J-182 NRSA02J-332 NRSA02J-102 NRSA02J-272 NRSA02J-103	MGR MGR MGR MGR	1.8K 1/10W 3.3K 1/10W 1.0K 1/10W 2.7K 1/10W 10K 1/10W
R131 R132 R133 R134 R135	NRSA02J-562 NRSA02J-272 NRSA02J-472 NRSA02J-472 NRSA02J-333	MGR MGR MGR MGR MGR	5.6K 1/10W 2.7K 1/10W 4.7K 1/10W 4.7K 1/10W 33K 1/10W
R136 R137 R138 R139 R140	NRSAO2J-472 QVPB613-502 NRSA02J-223 NRSA02J-223 NRSAO2J-223	MGR VR MGR MGR MGR	4.7K 1/10W 5.0K BURST LEVEL 122K 1/10W 22K 1/10W 22K 1/10W
R14434 R14445 R1445	NRSA02J-103 NRSA02J-472 NRSA02J-392 NRSA02J-392 NRSA02J-472	MGR MGR MGR MGR MGR	10K 1/10W 4.7K 1/10W 3.9K 1/10W 3.9K 1/10W 4.7K 1/10W
R146 R147	NRSAOZJ-472 NRSAOZJ-562	MGR MGR	4.7K 1/10W 5.6K 1/10W
CC45 CC45	GER41AM-476 NCT03CH-560 NCF21EZ-104 GER41AM-476 GER40JM-476	E CAP CAP CAP E CAP	47 10V 56P 50V 0.10 25V 47 10V 47 6.3V
C7 C8 C9 C10	NCF21EZ-104 GER40JM-476 GER41AM-476 GEPA0JM-476 GER41EM-106	C CAP E CAP NP CAP E CAP	47 6.3V 47 10V 47 6.3V 10 25V
C12 C13 C15 C16 C18	GER41EM-106 GER41AM-476 GER41AM-476 GEJ41VM-684 NCF21HZ-103	E C C A P C C C A P C C C A P C C A P C C A P C C A P	10 25V 47 10V 47 10V 0.68 35V 0.010 50V
C19 C20 C21 C22 C23	NCF21EZ-104 NCF21EZ-104 QER41AM-476 NCB21HK-272 NCT03CH-561	C C C A P C C A P C C A P C C A P C C A P C C A P C C A P	0.10 25V 0.10 25V 47 10V 2700P 50V 560P 50V
C24 C25 C27 C28 C29	QER40JM-476 QEJ41VM-684 QER40JM-476 NCF21HZ-103 NCF21HZ-103	E CAP E CAP E CAP C CAP	47 6.3V 0.68 35V 47 6.3V 0.010 50V 0.010 50V
0312334 0003334	NCF21EZ-104 NCT03CH-390 NCT03CH-330 NCT03CH-180 NCT03CH-121	C CAP C CAP C CAP C CAP	0.10 25V 39P 50V 33P 50V 18P 50V 120P 50V
C3567 C33789 C359	QER41EM-106 QER41EM-106 NCT03CH-101 NCF21HZ-103 QER41EM-106	E CAP C CAP C CAP E CAP	10 25V 10 25V 100P 50V 0.010 50V 10 25V
04448 04444 04444	NCF21EZ-104 NCF23CH-121 QER40JM-476 QEJ41AM-106 QEJ41AM-475	C CAP E CAP T CAP	0.10 25V 120P 50V 47 6.3V 10 10V 4.7 10V
C446789	QEJ41AM-106 NCF21H2-103 NCF21EZ-104 NCT03CH-560 QAT3120-200	T CAP C CAP C CAP C CAP TR CAP	10 0.010 0.10 0.10 25V 56P 50V
055555 055555	QCT05UJ-100 NCF21HZ-103 NCF21EZ-104 NCT03CH-331 QAT3120-200	C CAP C CAP C CAP TR CAP	10P 50V 0.010 50V 0.10 25V 330P 50V
C55 C557 C558 C559	NCT03CH-101 NCT03CH-221 NCT03CH-121 NCT03CH-121 NCF21EZ-104 NCT03CH-220	C CAP C CAP C CAP C CAP	100P 50V 220P 50V 120P 50V 0.10 25V 22P 50V
C60 C61 C62 C63 C64	NCS21HJ-102 NCT03CH-101 NCT03CH-330 QER40JM-476 NCF21HZ-103	C CAP C CAP C CAP C CAP	1000P 50V 100P 50V 33P 50V 47 6.3V 0.010 50V
C65 C66	NCF21HZ-103 QER40JM-476	C CAP E CAP	0.010 ·50V 47 6.3V
C65 C66	NCF21HZ-103 QER40JM-476	C CAP E CAP	0.010 50V 47 6.3V

C67 C68 C69	50V 50V 10V 10V 250V 50V 50V 50V
C75 NCT03CH-470 C CAP L1 SCV0331-4R7 L2 SCV0331-390 PEAKING COIL PEAKING COIL PEAKING COIL SCV0331-390 PEAKING COIL PEAKING COIL PEAKING COIL PEAKING COIL PEAKING COIL SCV0343-500 DL1 SCV0639-001 DELAY LINE X1 SCV0348-002 CRYSTAL CRYSTAL CRYSTAL CRYSTAL T1 SCV0171-001 TRANSFORMER CBM1 CBMC4299-POA R-Y(P) CBM	10V 50V 25V 50V
C75 NCT03CH-470 C CAP 47P L1 SCV0331-4R7 PEAKING COIL 10 H 10	50V
DL1 SCV0639-001 DELAY LINE X1 SCV0348-002 CRYSTAL 15.625K1 CN3 SCV0501-001 CONNECTOR 30PIN T1 SCV0171-001 TRANSFORMER TRANSFORMER CBM1 CBMC4299-POA R-Y(P) CBM	
X1	
CN3 SCV0501-001 CONNECTOR 30PIN T1 SCV0171-001 TRANSFORMER TRANSFORMER • CBM1 CBMC4299-POA R-Y(P) CBM	
T1 SCV0171-001 TRANSFORMER TRANSFORMER • CBM1 CBMC4299-POA R-Y(P) CBM	12
● CBM1 CBMC4299-P0A R-Y(P) CBM	
Q1 2SC2295(B.C) TRANSISTOR MATSUSH	
Q3 ZSA10ZZ(B.C) TRANSISTOR MATSUSH	ITA ITA
R1 NRSA02J-102 MGR 1.0K 1 R2 NRSA02J-182 MGR 1.3K 1 R3 NRSA02J-152 MGR 1.5K 1 R4 NRSA02J-272 MGR 2.7K 1 R5 NRSA02J-682 MGR 6.8K 1	//// 00000 WWWW
	/10W /10W W01/
C1 NCTO3CH-121 C CAP 120P C2 NCTO3CH-560 C CAP 56P	50V 50V
SCV1210-006 CONNECTOR	

Symbol	Part No.	Part Name	Description	Symbol No.	Part No.	Part Name	Description
No.	CBMC4299-P1A	B-Y (P) CBM		• СВМ4	CBMC4216-00A	LIMITER CBM	
				IC1 IC2	NJM4558M NJM4558M	ic	38C
Q1 02 Q3	Z\$C2295(B.C) 25A1022(B.C) 25A1022(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA	Q1 Q2 Q3	2SA1022(B.C) 2SK198(Q.R) 2SC2295(B.C)	TRANSISTOR FET TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA
R1 R2	NRSAO2J-102 NRSAO2J-182 NRSAO2J-472	MGR MGR MGR	1.0K 1/10W 1.8K 1/10W 4.7K 1/10W	D1.	HSM276\$ HSM276\$	DIODE	HITACHI HITACHI
R3345	NRSA02J-562 NRSA02J-682	MGR MGR MGR	5.6K 1/10W 6.8K 1/10W	R1 R2 R3	NRSA02J-102 NRSA02J-102 NRSA02J-682	MGR MGR MGR	5.8K 1/10W 5.8K 1/10W 5.8K 1/10W 5.3K 1/10W
R6 R7 R8	NRSAOZJ-182 NRSAOZJ-152 NRSAOZJ-562	MGR MGR	1.5K 1/10W 5.6K 1/10W	R4 R5 R6 R7	NRSAO2J-682 NRSAO2J-332 NRSAO2J-472	MGR MGR MGR	4.7K 1/10W
C 1	NCT03CH-121 NCT03CH-560	C CAP	120P 50V 56P 50V	R3 R9 R10	NRSA02J-823 NRSA02J-185 NRSA02J-633 NRSA02J-222	MGR MGR MGR MGR	1.8M 1/10W 68K 1/10W 2.2K 1/10W
	SCV1210-006	CONNECTOR		R112 R123 R134 R15	NRSAO2J-103 NRSAO2J-103 NRSAO2J-471 NRSAO2J-471 NRSAO2J-223	MGR MGR MGR MGR MGR	1/10W 1/10W 1/10W 1/10W 1/10W 1/10W
				R16 R17 R18	NRSAOZJ-223 NRSAOZJ-123 NRSAOZJ-224	MGR MGR MGR	22K 1/10W 22K 1/10W 22K 1/10W
				CCCC5	NCF21HZ-103 NCF21HZ-103 NCF21HZ-103 NCF21HJ-102 NCF21HJ-102 NCF21HZ-103	CCCCCC CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	00100 50V 000000 500V 000100 500V
				C6 C7 C8 C9	NCS21HJ-102 NCF21EZ-104 NCF21EZ-104 NCB21HK-333	C CAP C CAP C CAP	10000 50V 2000 200V 2000 50V
• CBM	CBMC4215-00A	OFFSET CBM			SCV1210-012	CONNECTOR (CLI	
IC1	NJM4558M	ıc	JRC				
9900	2SA1022(B-C) 2SC255(B-C) 2SC21621(B34) 2SA1462(334)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA NEC NEC	758	RA board		
		MGR MGR	22K 1/10W 10K 1/10W 10K 1/10W	101	NJM319M TC4053BF	ic	JRC TOSHIBA
100045 RECERT	NRSA0221-11053 NRSA0221-11053 NRSA0221-11053	MGR MGR MGR	10K 1/10W	Q1 Q2 03	25C2295(B.C) 25C2295(B.C) 25C2295(B.C) 25C2295(B.C) 25C2295(B.C)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATHER PARTY AND
R6789910	NRSAO2J-472 NRSAO2J-392 NRSAO2J-471 NRSAO2J-471 NRSAO2J-274	MGGR MGGR MGGR MGGR	4.7K 1/10W 3.9K 1/10W 470 1/10W 470 1/10W 279K 1/10W	Q5 Q6	23C2275(B.C) 23C2275(B.C) DTC124K	TRANSISTOR TRANSISTOR	ROHM
112345 RRRRR	NRSA02J-473 NRSA02J-222 NRSA02J-154 NRSA02J-184	MGR MGGR MGGR MGGR	47K 1/10W 2.2K 1/10W 150K 1/10W 180K 1/10W 270K 1/10W	12745 RRRRR	NRSA02J-273 NRSA02J-631 NRSA02J-103 NRSA02J-123 QVSAC40J-502	MGR MGR MGR MGR VR	27K 1/10W 1300 1/10W 130K 1/10W 12K 1/10W 12K 1/10W 13.0K ZERA SET
R167 R113 R119	NRSA02J+184 NRSA02J+224 NRSA02J+284 NRSA02J+224	MGR MGR MGR	180K 1/10W 220K 1/10W 180K 1/10W 220K 1/10W	R6 R7 R8 R9 R10	NRSA02J-104 NRSA02J-103 NRSA02J-183 NRSA02J-562 NRSA02J-183	MGR MGR MGR MGR MGR	100K 1/DW 100K 1/DW 100K 1/DW 100K 1/DW 100K 1/DW
C12345	NCT03CH-470 NCT03CH-150 NCT03CH-150 NCF21EZ-104 NCF21HK-333 NCF21HK-333	C CAP C CAP C CAP C CAP	47P 50V 15P 50V 0-10 25V 0.033 50V	R11 R12 R14	NRSA02J-562 NRSA02J-103 NRSA02J-183 NRSA02J-332	MGR MGR MGR MGR	6.6K 1/DW 10K 1/DW 10K 1/DW 10K 1/DW 10K 1/DW
C6 C7 C8	NCF21HZ-333 NCF21EZ-104 NCF21EZ-104	C CAP CCAP	0.033 50V 0.10 25V 0.10 25V	R16 R17 R18	NRSAO2J-472	MGR MGR MGR	3.3K 1/10 W 1.7K 1/10 W 1.7K 1/10 W 22K 1/10 W
	SCV1210-012	CONNECTOR (CILEAD)	LIP	C1 C2 C3 C4	NCF21HZ-103 NCF21EZ-104 NCF21EZ-104 NCF21EZ-104	C CAP C CAP C CAP	0.010 00555 0.010 05555 0.010 05555
					SCV0495-004	CONNECTOR	2PCS.4PI
							!



7.11 CP board assembly III III

Symbol No.	Part No.	Part Name	Description	Symbol No.	Part No.	Part Name	Description
1 C1 1 C2 1 C3 1 C4 1 C5	TA78L005AP TL7705CP NJM2902M SCV1182-001 PLSC1025	IC IC IC FUNCTION MODULE IC (CPU)	TOSHIBA TEXAS JRC JVC NTSC, HD63705ZDF	R64 R65 R66	NRSA02J-103 NRSA02J-103 NRSA02J-103 NRSA02J-103 NRSA02J-103	MGR MGR MGR MGR MGR	10K 1/10W 10K 1/10W 10K 1/10W 10K 1/10W 10K 1/10W
t C6	PLSC1026 IR9K08 M50452-001P	IC (CPU)	PAL, HO6370520F SHARP MITSUBISHI	R68 R69 R70 R71	NRSA02J-103 NRSA02J-103 NRSA02J-103	MGR MGR	10K 1/10W 10K 1/10W 10K 1/10W 10K 1/10W
1C10 1C11	M889009P-G-106 S-2444-101 TC50H001F TC40H004F	IC IC	MITSUBISHI FUJITSU SEIKO TOSHIBA	R72 R73 R74 R75 R76	NRSAO2J-103 NRSAO2J-103 NRSAO2J-223 NRSAO2J-223 NRSAO2J-223	MGR MGR MGR MGR MGR	10K 1/10W 10K 1/10W 22K 1/10W 22K 1/10W 22K 1/10W
00000	DTC124K DTC124K DTC124K DTC124K DTC124K	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	ROHM ROHM ROHM ROHM	R77 R78 R79 R80 R81	NRSAO2J-223 NRSAO2J-223 NRSAO2J-223 NRSAO2J-223 NRSAO2J-223	MGR MGR MGR MGR MGR	22K 1/10W 22K 1/10W 22K 1/10W 22K 1/10W 22K 1/10W
96 97 98 99 910	DTC124K DTC124K DTC124K DTC124K ZSA1022(B.C) DTC124K	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	ROHM ROHM ROHM YATSUSHITA ROHM	R82 RA1 RA2	NRSA02J-104 GRB081K-223 GRB081K-223	R.NETWORK R.NETWORK	100K 1/10W
D1 D2 D3 D4	MA152WK MA152WK MA152A MA152WK	DIODE DICOE DIODE	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA	C1 C23 C45	QER41CM-476 QER41CM-476 QER41CM-476 NCF21HZ-103 QER41CM-476	E 111111111111111111111111111111111111	47 16V 47 16V 47 16V 0.010 50V 47 16V
R12 R23 R4 R5	NRSA02J-104 NRSA02J-101 NRSA02J-272 NRSA02J-103	MGR MGR MGR MGR MGR	100K 1/10W 10K 1/10W 100 1/10W 2.7K 1/10W 10K 1/10W	C6 C7 C8 C9 C10	GER41EM-106 GER41EM-106 NCF21EZ-104 NCT03CH-220 NCF21EZ-104	E E C C C C C C C C C C C C C C C C C C	10 NSSV NSSV NSSV NSSV NSSV NSSV NSSV NSSV
R6 R7 R8 R9 R10	NRSA02J-223 NRSA02J-104 NRSA02J-223 NRSA02J-223 NRSA02J-102	MGGR MGGR MGGR MGGR	22K 1/10W 100K 1/10W 22K 1/10W 22K 1/10W 1.0K 1/10W	C112 C112 C113 C115	NCF21EZ-104 NCT03CH-331 QER41EM-106 NCF21EZ-104 NCF21EZ-104	9 P P P P P P P P P P P P P P P P P P P	0.10 NOV
1111111 RRRRR RRRRR	NRSA02J-101 NRSA02J-122 NRSA02J-122 NRSA02J-121 NRSA02J-122	MGR MGR MGR MGR MGR	100 1/10W 120 1/10W 1.2K 1/10W 120 1/10W	C16 C17 C18 C19 C20	QER41HM-105 NCIO3CH-220 NCIO3CH-220 QER41CM-476 NCF21EZ-104	E C C C C C C C C C C C C C C C C C C C	1.0 50V 50V 50V 50V 10 10 10 10 10 10 10 10 10 10 10 10 10 1
R167 R190 R100	NRSA02J-472 NRSA02J-472 NRSA02J-103 NRSA02J-103 NRSA02J-103	MGR MGR MGR MGR MGR	4.7K 1/10W 4.7K 1/10W 10K 1/10W 10K 1/10W 10K 1/10W	C 2334 5	QER41CM-476 NCF21EZ-104 QER41HM-105 QER41HM-475 QER41HM-475	E CAP CAP CAAP E CCAAP	1.0 25V 1.0 50V 4.7 50V 4.7 50V
20040 200000 200000	QVPB614-203 QVPB614-203 NRSA02J-473 NRSA02J-103 NRSA02J-472	VR VR MGR MGR MGR	20K B BLK 20K B WHT 47K 1/10W 10K 1/10W	026 0278 0003 0003	NCF21HZ-103 NCF21HZ-103 NCT03CH-330 NCF21EZ-104 NCT03CH-151	C C C C C C C C C C C C C C C C C C C	0.010 50V 0.010 50V 33P 50V 0.10 250V
8 R R R R R R R R R R R R R R R R R R R	NRSAOZJ-473 GVPB614-203 GVPB614-203 NRSAOZJ-473 NRSAOZJ-103	MGE VR VR MGR MGR	27K 1/10W 20K R BLK 20K R WHT 47K 1/10W 10K 1/10W	C31 C32 C33	NCF21EZ-104 NCT03CH-220 NCT03CH-220	C CAP C CAP C CAP	0.10 N5V 22P NOV
255555 255555 255555 255555	GVPB614-102 NRSA02J-182 NRSA02J-103 GVPB614-203 NRSA02J-393	VR MGR MGR VR MGR	1.0K IRIS LEVEL 1.8K 1/10W 10K 1/10W 20K MASTER BLK 39K 1/10W	L2 L3 X1	SMV2223 SMV2223 SCV1238-001	PEAKING COIL PEAKING COIL PEAKING COIL CRYSTAL	3.6864#HZ
R36 R37 R38 R39	NRSA02J-332 QVPB614-202 NRSA02J-103 NRSA02J-122	MGR VR MGR MGR	3.3K 1/10W 2.0K 12V DET 10K 1/10W 1.2K 1/10W 22K 1/10W	\$1 \$2	SCV1311-001 SCV1335-002	RCTALY SWITCH DIP SWITCH	PIX SEL SW CC SW/(HK SW
R40 R41245 R445 R445	NRSAO2J-223 NRSAO2J-103 NRSAO2J-103 NRSAO2J-203 NRSAO02J-203 NRSAO02J-203	MGR MGR MGGR MGGR MGR	22K 1/10W 2.2K 1/10W 10K 1/10W 10K 1/10W 22K 1/10W	CN1 CN2	SCV0501-001 SCV0501-001	CONNECTOR	30 PIN 30 PIN
R444901 R7551	NRSA02J-103 NRSA02J-103 NRSA02J-334 NRSA02J-223 NRSA02J-472	MGR MGR MGR MGR MGR	10K 1/10W 10K 1/10W 330K 1/10W 22K 1/10W 4.7K 1/10W				
23456 R5556 RR55	NRSA02J-101 NRSA02J-101 NRSA02J-103 NRSA02J-103 NRSA02J-103	MGR MGR MGR MGR MGR	100 1/10W 100 1/10W 10K 1/10W 10K 1/10W 10K 1/10W				
R57 R58 R59 R60 R61	NRSA02J-103 NRSA02J-103 NRSA02J-103 NRSA02J-103 NRSA02J-103	MGR MGR MGR MGR MGR	10K 1/10W 10K 1/10W 10K 1/10W 10K 1/10W 10K 1/10W				
R62 R63	NRSA02J-103 NRSA02J-103	MGR MGR	10K 1/10W 10K 1/10W				

Symbol	Part No.	Part Name	Description	Symbol No.	Part No.	Part Name	Description
No. CBM1 CBM2	CBMC4226-00A CBMC4226-00A	AW/AB DET 1 CMB AW/AB DET 1 CBM AW/AB DET 1 CBM		● CBM5	CBMC4303-00A	NAM DET CBM	
• CBM3	CBMC4226-00A	AW/AB DET TOUR		101	LMZ904M	IC	NATIONAL SEMICONDUCTOR
0.1	2SC2295(B.C)	TRANSISTOR	MATSUSHITA	0.2	DTC124K	TRANSISTOR	ROHM
#N045	75K198(Q.R) 2SC2295(B.C) 2SK198(Q.R) 2SK360	FET TRANSISTOR FET FET	MATSUSHITA MATSUSHITA MATSUSHITA HITACHI MATSUSHITA	D1 D2 D3	MA152A MA152A MA152A	DIODE	MATSUSHITA MATSUSHITA MATSUSHITA
G PREPARE R	2SA1022(B.C) N?SA02J-102 NRSA02J-152 NRSA02J-331 NRSA02J-474 NRSA02J-104 NRSA02J-104	MGGR MMGGR MMGGR MMGGR MMGR	1.0K 1/10W 1.5K 1/10W 330 1/10W 470K 1/10W 100K 1/10W 470K 1/10W	R14567 R87 R89 R89	NRSAO2J-183 NRSAO2J-103 NRSAO2J-103 NRSAO2J-822 NRSAO2J-562 NRSAO2J-353 NRSAO2J-183 NRSAO2J-183 NRSAO2J-173 NRSAO2J-173 NRSAO2J-173	MGR MGR MGR MGR MGR MGR MGR MGR	18K 1/10W 15K 1/10W 8.2K 1/10W 5.6K 1/10W 5.6K 1/10W 15K 1/10W 12K 1/10W 12K 1/10W 12K 1/10W
R67894	NRSAOZJ-102 NRSAOZJ-474 NRSAOZJ-104 NRSAOZJ-154 NRSAOZJ-102	MGR	100% 1/10W 150K 1/10W 1.0K 1/10W	R10 R11 R12		MGR MGR MGR	
R11 R12	NRSA02J-474 NRSA02J-104	MGR	470K 1/10W 100K 1/10W	R13 R14 R15	NRSA02J-223 NRSA02J-222 NRSA02J-154	MGR MGR	22K 1/10W 2.2K 1/10W 150K 1/10W
C12 CC3	NCT03CH-680 NCF21EZ-104 NCF21EZ-104 NCF21EZ-104	C CAP C CAP C CAP	68P 50V 0.10 25V 0.10 25V 0.10 25V	C1	NCF21EZ-104 SCV1210-006	C CAP	0.10 25V
• CBM4	4 CBMC4306-00A	AW/AB DET 2 CBI	w 				
IC1 IC2	LM2904M LM2904M	16	NATIONAL SEMICONDUCTOR				
Q1 Q2 Q3	25K198(Q.R) 25K198(Q.R) 25K198(Q.R)	FET FET FET	MATSUSHITA MATSUSHITA MATSUSHITA				
100045	NRSAO2J-103 NRSAO2J-103 NRSAO2J-103 NRSAO2J-103 NRSAO2J-103	M G G G G G G G G G G G G G G G G G G G	10K 1/10W 10K 1/10W 10K 1/10W 10K 1/10W 10K 1/10W				
67 20 7 0 R R R R R R R R R R R R R R R R R R R	NRSAO2J-103 NRSAO2J-474 NRSAO2J-104 NRSAO2J-333 NRSAO2J-472	MGR MGR MGR MGR	10K 1/10W 470K 1/10W 100K 1/10W 133% 1/10W 4.7K 1/10W				
R1123 R123 R123 R125	NRSA02J-474 NRSA02J-104 NRSA02J-333	MGR MGR MGR MGR MGR	470K 1/10W 100K 1/10W 33K 1/10W 10K 1/10W 470K 1/10W				
R16 R17 R18 R19	NRSA02J-104 NRSA02J-333 NRSA02J-472 NRSA02J-333	MGR MGR MGR MGR MGR	100K 1/10W 33K 1/10W 4.7K 1/10W 33K 1/10W 12K 1/10W				
C1	NCF21EZ-104 SCV1210-012	C CAP CONNECTOR (CLIF	0.10 25V				

7 12	PS hoard	assembly	1 2	

mbol Jo.	Part No.	Part Name	Description	Symbol No.	Part No.	Part Name	Description
C1 C2 C3	TA78L008AP CA3130E DN819	IC IC	TOSHIBA RCA MATSUSHITA TOSHIBA	IC1	NJM2068MD 25C2295(B.C)	IC TRANSISTOR	JRC MATSUSHITA
000	TC40018P NJM79L05A 2SC1685(R.S) 2SC1384(R)	TRANSISTOR	JRC MATSUSHITA MATSUSHITA	D1 D2 D3	MA152A MA153 MA153	DIODE DIODE DIODE	MATSUSHITA MATSUSHITA MATSUSHITA
03 04 05 06 07 08	2SC1685(R.S) 2SC1384(R.S) 2SC1683(R.S) 2SC1685(R.S) 2SC1685(R.S) 2SC1685(R.S) 2SC1685(R.S)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA	R12 R25 R25 R25	NRSAO2J-473 NRSAO2J-473 NRSAO2J-102 NRSAO2J-100 NRSAO2J-681	MGR MGR MGR MGR MGR	47K 1/10W 47K 1/10W 1.0K 1/10W 10 1/10W 680 1/10W
D12345	MA165 MA165 ERA882-004V3 ERA882-004V3	DIODE DIODE DIODE DIODE	MATSUSHITA MATSUSHITA FUJI ELECTRIC FUJI ELECTRIC FUJI ELECTRIC	R6 R7 R8 R9 R10	NRSAOZJ-68Z NRSAOZJ-560 NRSAOZJ-681 NRSAOZJ-682 NRSAOZJ-560	MGR MGR MGR MGR MGR	6.8K 1/10W 56 1/10W 680 1/10W 6.8K 1/10W 5.8K 1/10W
D0789	ERA82-004V3 HZ3BLL HZ6(2C)L MA165	DIODE ZENER DIODE ZENER DIODE DIODE	FUJI ELECTRIC HITACHI HITACHI MATSUSHITA MATSUSHITA	R11 R13 R13 R15	NRSA02J-472 NRSA02J-472 NRSA02J-101 NRSA02J-102 NRSA02J-101	MGR MGR MGR MGR MGR	4.7K 1/10W 1.7K 1/10W 100 1/10W 1.0K 1/10W 100 1/10W
D10 D11	MA165 HZ6(2C)L	ZENER DIODE	HITACHI	R16 R17 R19 R19 R20	NRSAOZJ-102 NRSAOZJ-103 NRSAOZJ-103 NRSAOZJ-080 NRSAOZJ-220	MGR MGR MGR MGR MGR	1.0K 1/10W 10K 1/10W 10K 1/10W 2 1/10W
R127345	9RD161J-822 9RD161J-472 9RD161J-682 9RD161J-181 9RD161J-122	CR	9.2K 1/6W 4.7K 1/6W 6.8K 1/6W 180 1/6W 1.2K 1/6W	R21	QRZ0052-100	FUSEBLE R	10 1/4W
R6 R7 R3 R9 R10	QVP8614-102 QRD161J-682 QRD161J-471 QRD161J-471 QRD161J-152	VR CCR CCR CCR	1.0K +9V ADJ 6.8K 1/6W 470 1/6W 470 1/6W 1.5K 1/6W	C1 C23 C25 C25	QER41AM-476 NCF21EZ-104 QER41AM-476 NCT03CH-331 QER41EM-106	E C C C C C C C C C C C C C C C C C C C	47 0.10 25V 27 330P 10 25V
P11 R12 R13 R14	QRD161J-103 QRD161J-471 QRD161J-471 QRD161J-100	CRRCCC	10K 1/6W 470 1/6W 470 1/6W 10 1/6W	C6 C7 C3 C9 C10	NCB21HK-222 QEJ41AM-106 NCE743CH-306 CE741EM-176 QER40JM-476	OT CORE	200P 500VVV 51057 6
01 02 03 04	QER41CM-227 QER41EM-106 QER41HM-475 QCS11HJ-470 QER41HM-105	E CAP E CAP E CAP C CAP	220 16V 10 25V 4.7 50V 4.7P 50V 1.0 50V	C11 C12 C13	NCB21HK-222 QEJ41AM-106 QER41AM-476	C CAP T CAP E CAP	2200P 50V 10V 27 10V
C6 C7 C8 C9 C10	QETA1AM-227 QETA1AM-227 QETA1EM-106 QER41EM-106 QETA1AM-227	DEFENDENCE OF THE PROPERTY OF	220 10V 220 10V 10 25V 10 25V	CN19 CN24 CN25	SCV1227-007 SCV1227-002 SCV1227-005 SCV1227-006 SCV1227-003	EMI FILTER CONNECTIOR CONNECTIOR CONNECTIOR	7 P.P.H.H.
C11 C11 C113 C115	QETA1AM-227 QETA1EM-477 QETA1EM-227 QETA1AM-477 QETA1AM-477	EEE CAP	220 10V 470 25V 220 25V 470 10V 10 25V	CN28 CN29	ŠČV1227-006 SCV1227-003	CONNECTOR	ZPIZ ZPIZ
C16	QFN41HJ-103 SCV0983-500 SCV0983-500	COIL COIL	0.010 50V 50#H 50#H]
CN12 CN16 CN18	SCV1227-002 SCV1227-011 SCV1227-003	CONNECTOR CONNECTOR CONNECTOR	2PIN 11PIN 3PIN				
<u>8.</u> T1	SCV1312-002	POWER TRANS					

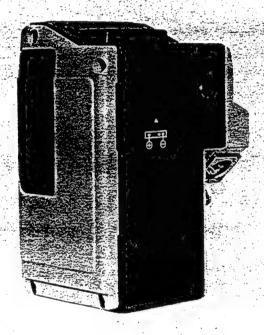
7.14 MT board assembly 14 14

mbol No.	Part No.	Part Name	Description
C1 C2	TA78L005AP NJM4556D	I C	TOSHIBA JRC
Q1 Q2 Q3 Q4 Q5	DTA124ES DTA124ES 2SC1685(R.S) 2SC1685(R.S) DTA124ES	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	ROHM ROHM MATSUSHITA MATSUSHITA ROHM
Q6	DTC124ES	TRANSISTOR	ROHM
D1	MA165	DIODE	MATSUSHITA
R12345	QRD161J-103 QRD161J-152 QRD161J-472 QRD161J-561 QRD161J-101	CCCCC RR	10K 1/6W 1.5K 1/6W 4.7K 1/6W 560 1/6W 100 1/6W
RC7.60910	QRD161J-102 QRD161J-1033 QRD161J-1033 QRD161J-200	RRRRR	100 1/6W 3.3K 1/6W 18K 1/6W 22K 1/6W 1.0K 1/6W
R12356	QRD161J-102 QRD161J-562 QRD161J-750 QRD161J-762 QRD161J-223	CRRCCCCR	1.0K 1/6W 3.6K 1/6W 75 1/6W 5.6K 1/6W 22K 1/6W
R17 R18	QRD161J-332 QRD161J-103	CR CR	3.3K 1/6W 10K 1/6W
12345	QER41CM-476 QEJ41AM-106 QER40JM-476 QFN41HJ-102 QER41CM-476	E CAPP CAPP CAPP	47 16V 10 10V 47 6.3V 1000P 50V 47 16V
C 6 C 7 C 8	QER40JM-476 QEJ41AM-106 QER40JM-476	E CAP T CAP E CAP	47 6.3V 10 10V 47 6.3V
SW1	SSV0997-2100	DIP SWITCH	FRAME/FIELD
CN1 CN2 CN3 CN4 CN5	SCV0500-001 SCV0500-001 SCV0500-001 SCV0500-001	CONNECTOR CONNECTOR CONNECTOR CONNECTOR CONNECTOR	30PIN CP 30PIN CP 30PIN SE 30PIN PR2 30PIN PR1
CN11 CNNNNN CNNNNN	SCV1319-15P SCV1227-012 SCV1228-013 SCV1227-006 SCV1227-004	CONNECTOR CONNECTOR CONNECTOR CONNECTOR CONNECTOR	ISPIN ISPIN ISPIN ISPIN ISPIN ISPIN
CN27 CN30 CN31	SCV1251-50S SCV1227-003 SCV1227-010	CONNECTOR CONNECTOR CONNECTOR	50PIN 3PIN 10PIN

JVC Service Manual

For remaining sections of this booklet contents the servicing instructions.

Following sections are for use by qualified personnel only.



CAMERA ADAPTER (KA-20)

TABLE OF CONTENTS

WARNING:

THE REMAINING PORTION OF THIS TABLE OF CONTENTS LISTS THE SERVICING INSTRUCTIONS. FOLLOWING SECTIONS ARE FOR USE BY QUALIFIED PERSONNEL ONLY.

Section	$\frac{d}{dt} \left(\frac{dt}{dt} + \frac{dt}{dt} \right) = \frac{dt}{dt} \left(\frac{dt}{dt} + \frac{dt}{dt} \right) + \frac{dt}$	Page
1.	CIRCUIT DESCRIPTION	
2.	DISASSEMBLY (See the section 2 of KY-25/KY-R25)	2 - 1
3.	ADJUSTMENT PROCEDURE(See the section 3 of KY-25/KY-R25)	3 - 1
4.	REPACKING	
5.	EXPLODED VIEW AND PARTS LIST	5 - 1
6.	CHARTS AND DIAGRAMS	6 - 1
. 7	ELECTRICAL PARTS LIST	7 - 1

SECTION 1 CIRCUIT DESCRIPTION

1.1 VP BOARD

This is the circuit which receives the video signal from the KY-25 camera head and sends all the necessary signals to the VTR or Remote control unit.

The power (+9 V DC) necessary for the video processing system is supplied from the camera head via the 50-pin interface connector.

R/G/B and R-Y/Y1(Y2)/B-Y signals supplied from the camera head enter CBM1, while chroma signal for the S-VHS mode directly enters IC1-A.

These signals input to CBM1 and IC1-A are further sent to S1 and S3 (CT board) which siwtch coming signals on and off according to their setting positions for video signal output through the VTR connector.

Relation between setting positions of S1 and S3 and output signals is shown in the following table.

Special care is necessary for use in the VTR or RM mode (MODE switch).

If Y/C switch on the VP board is set to "ON", component signals R-Y/Y/B-Y or R/G/B are not output.

IC2 and IC3 comprise an input/output driver which handles the control data between the camera head and the remote control unit when the RM-P200 is connected.

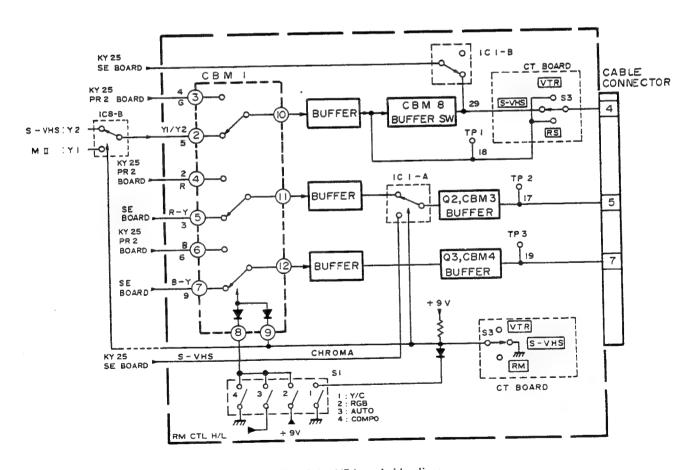


Fig. 1-1 VP board video lines

1.2 GL BOARD

This is the circuit which locks the KY-25 camera head to an external sync signal.

CBM-1 is a sync signal separator. As the external reference signal, a black burst signal is necessary.

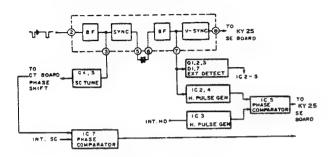


Fig. 1-2 GL board

The burst subcarrier is separated from the black burst by Q4 and Q5, and its phase is adjusted by the CT board. The subcarrier is fed back to the GL board and, at IC7, phase-compared with the subcarrier generated by the SSG in the camera head. The resulting error signal controls the SSG in the camera head.

The H sync is output via pin 7 of CBM-1 and shaped into H sync pulses by IC2 and IC4. The HD pulse generated by the SSG in the camera head is also shaped by IC3.

IC5 compares the phases of these two H sync signals. The resulting error signal controls the oscillation frequency of the H-clock oscillator on the SE board in the camera head.

The presence of external sync signals is detected by D1 and D7, and Q1, Q2 and Q3. When an external sync signal is detected, signals are applied via Q3 to ICs 1, 2, 3, 4, 5 and IC7, and to CBM-2. At the same time, the output of Q1 switches the SSG in the camera head to accept the external sync signal.

The H sync phase externally controls and adjusts the time constant of mono-stable multi-vibrator IC3.

Depending on whether the RM-P200 is connected or not, a different adjusting VR is used. This switching is done by IC1-A.

SECTION 2 DISASSEMBLY

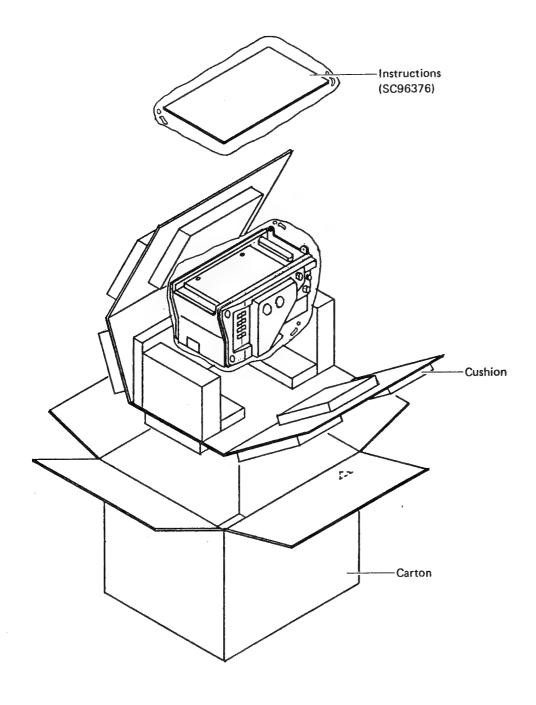
• See the section 2 of KY-25/KY-R25.

SECTION 3 ELECTRICAL ADJUSTMENT

• See the section 3 of KY-25/KY-R25.

SECTION 4 REPACKING

4.1 CAMERA ADAPTER KA-20 REPACKING



SECTION 5 EXPLODED VIEW AND PARTS LIST

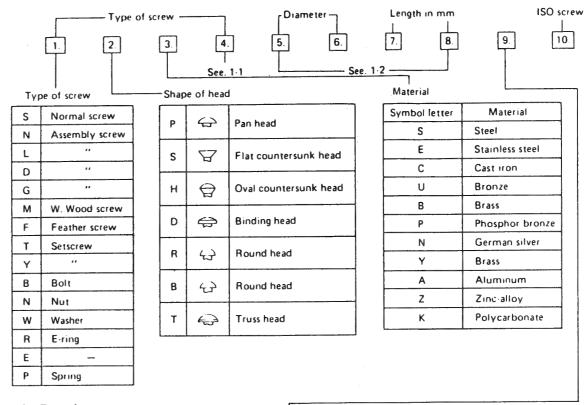
Note: Replacing marked \triangle parts, be sure to use parts specified for safety purposes.

In this exploded views the part number of the screws and washers designate the type and dimensions of those items.

The following examples will help you to decipher them.

5.1 STANDARD PART NUMBER CODING

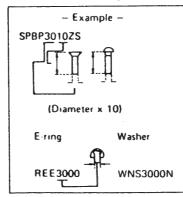
5.1.1 Screw coding



1-1 Type of screw

Р	Cross-Recessed head screw	
Α	Tapping screw	
В	Tapping screw	
T	Tapping screw	
E	Tapping screw	

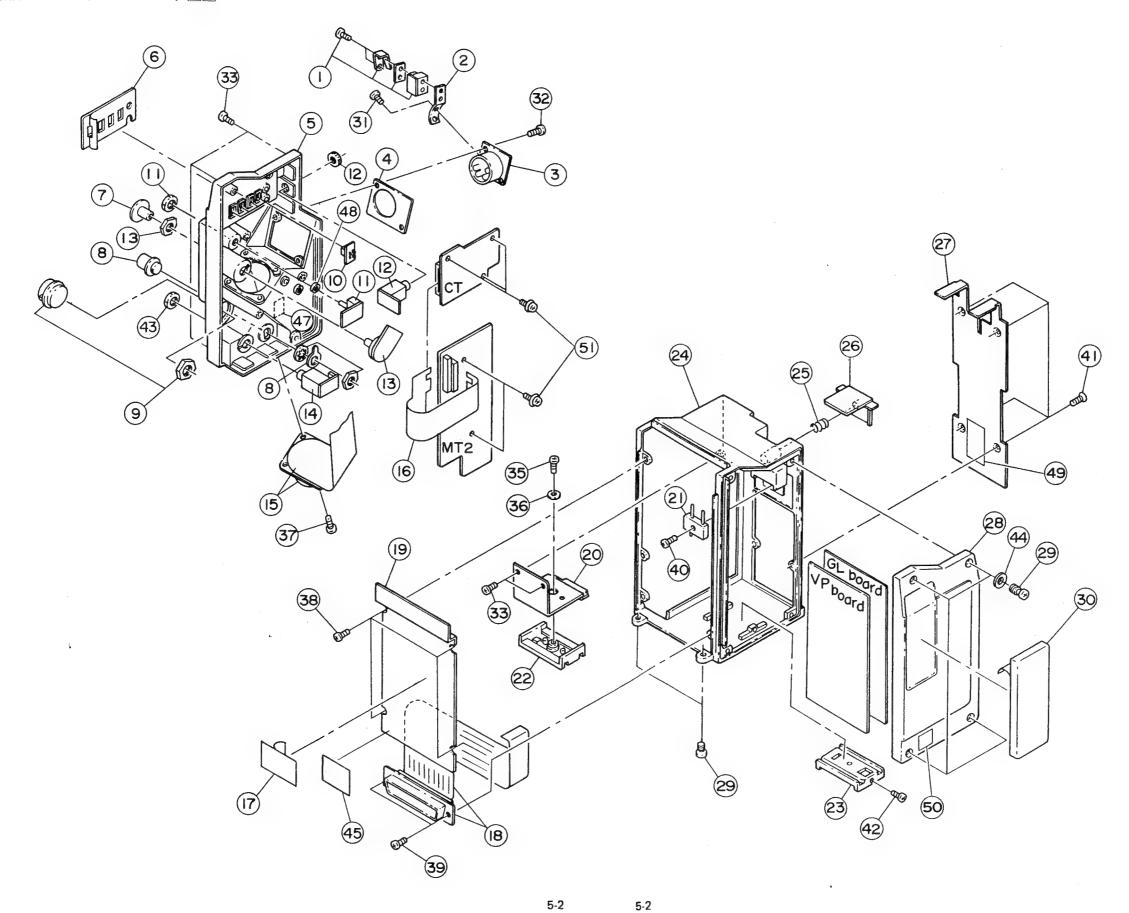
1-2 Diameter and Length of screw



Surface treatment

Symbol letter	Surface treatment		
Z	Galvanization, dichromic acid treatment (MFZn2-C)		
N	Nickel plating (MFNi2, MFNi1)		
R	Chrome plating (MBCr2, MBCr1)		
G	Silver plating (SP4)		
w	Nichrome platings		
Р	Phosphite treatment		
В	Bronze plating		
М	Black coloring after galvanization		
А	Red coloring after galvanization		
С	Blue coloring after galvanization		
Т	Green coloring after galvanization		
V	Violet coloring after galvanization		
F	Iron with black coloring		

5.2.1 CAMERA ADAPTER (KA-20) assembly M2



- CAMERA ADAPTER (KA-20) assembly parts list -

M2MM		_
------	--	---

Symbol No.	Part No.	Part Name	Description
1 2 ∆ 3 4 5	SCV0399-001 SC40752-004 SCV0462-04P SC43445-003 SC10076-003 SC10076-004	Actuator Bracket XLR Connector Plate L. Side Cover L. Side Cover	4 Pin J6 "DC INPUT" U version E version
6 7 8 9 10	SC43513-021 SC43513-022 SC43505-001 SCV0749-011 SCV1214-002 SC43403-001	Name Plate Name Plate Knob BNC Connector Connector Knob	U version E version Nut included "GEN LOCK IN" Nut included 7 Pin "Y/C 358(443) OUT"
11 12 13 14 <u>1</u> 5	SCV1298-001 QMS3501-013 SCV0515-202 SCV0632-001 SCV1279-002	Toggle Switch Jack VR Jack Connector Assembly	S8 "POWER" J9 "EARPHONE" R1 "INCOM LEVEL" J8 "INCOM" FPC inclued 26Pin "VTR/RM"
16 17 ⚠ 18 19 20	SCV1280-001 Not Available SCV1278-001 SC31054-001 SC43530-001	FPC Serial No. Plate Connector Assembly Front Panel Bracket	50 Pin FPC included
 ▲ 21 ▲ 22 ▲ 23 24 25 	SCV0630-02P SC43503-002 SC43503-001 SC10074-011 SC41384-001	Connector Rail (Upper) Rail (Lower) Frame Spring	2 Pin "DC IN"
▲ 26272829▲ 30	SC41385-001 SC30515-003 SC20339-002 SC43397-002 SC43504-002 SC43828-001	Cover Slide Base R. Side Cover Screw Pad Sheet	
31 32 33 34	SPBP2003N SPSP2606N SDSP3006R	Screw Screw	M2 × 3 M2.6 × 6 M3 × 6
35 36 37 38 39 40	SDSA2606Z Q03091-138 SPSP3006N SDSP2604R SPSP2006N LPSP2610Z	Screw Washer Screw Screw Screw Screw Screw	M2.6 × 6 M3 × 6 M2.6 × 4 M2 × 6 M2.6 × 10
41 42 43 44	SSSP2606M SDSP2606M SC43628-001 - SC41058-004	Screw Screw Nut Caution Label	M2.6 × 6 M2.6 × 6
45 46 47 48 49 50	SC41058-004	Caution Label Caution Label Washer Caution Label Caution Label	U only U/E U only
51	LPSP3006Z	Screw	M3 x 6

SECTION 6 CHARTS AND DIAGRAMS

SCHEMATIC DIAGRAM NOTES

• Schematic safety precaution

Parts are safety related aprts.

When replacing them, be sure to use the specified parts.

Voltage and waveform measurements.

Voltage: Measured with digital voltmeter in DC range;

iris closed.

Waveform: Grey scale illuminated at more than 4000 lux

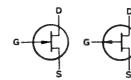
at 3200 K lighting.

• Chip transistors and FETs

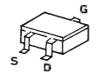
Transistors

FETs



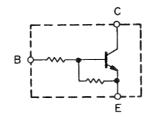






• Digital Transistor

DTC124K



• Chip diodes

MA152WK











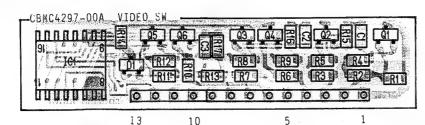
REPLACING SUBMINIATURE "CHIP"

- ullet Some resistors, shoring jumpers (0 Ω resistance), ceramic capacitors, transistors, and diodes are chip parts. These chip parts cannot be reused after they are once removed.
- Soldering cautions:
- 1) Do not apply heat for more than 3 seconds.
- 2) Avoid using a rubbing stroke when soldering.
- 3) Discard removed chips; do not reuse them.
- 4) Supplementary cementing is not required.
- 5) Use care not to scratch or otherwise damage the chips.
- Resistors and capacitors are not interchangeable with chip parts which is used in the color cameras BY-110, KY-210, etc., because of size difference. In case of part order, refer to the section "ELECTRICAL PARTS LIST".

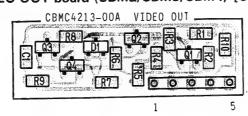
A B C D VP E F G H

6.1 VP CIRCUIT BOARDS

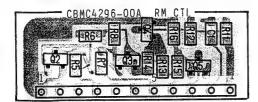
- VIDEO SW board (CBM1) [CBMC4297-00A] -

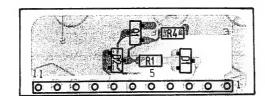


- VIDEO OUT board (CBM2/CBM3/CBM4) [CBMC4213-00A] -

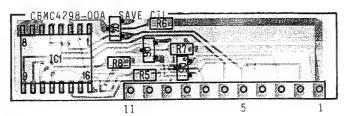


- RM CTL board (CBM5) [CBMC4296-00A] -

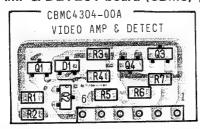




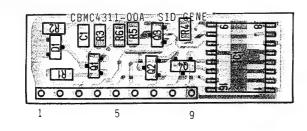
- SAVE CTL board (CBM6) [CBMC4298-00A] -

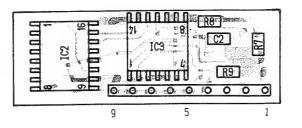


- VIDEO AMP & DETECT board (CBM8) [CBMC4304-00A] -

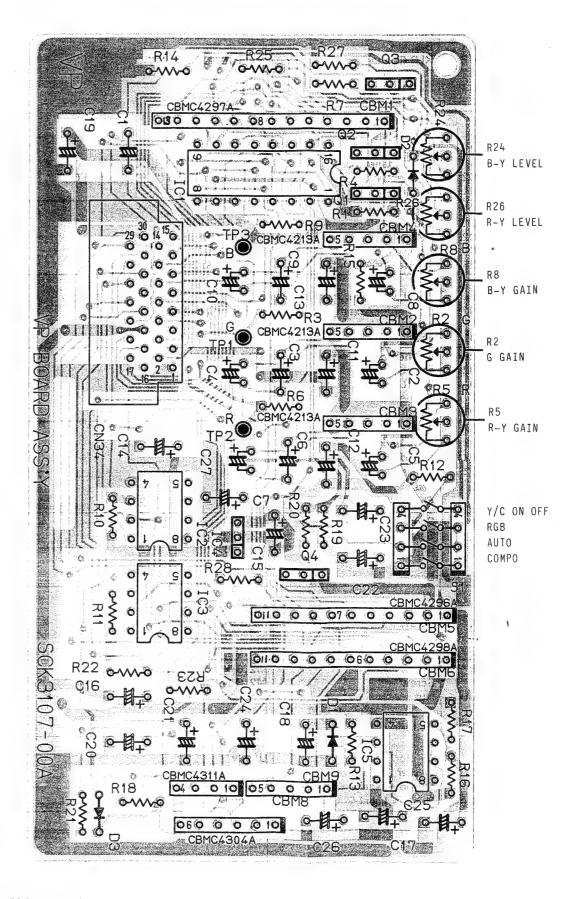


- SID GENE board (CBM9) [CBMC4311-00A] -



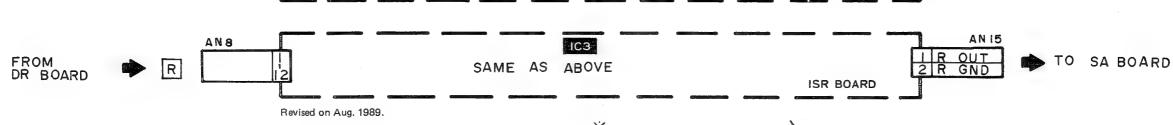


- VP board -



BLOCK IS D DIAGRAM 6.2 IS CIRCUIT BOARD 6.2.1 ISB board ISN1(B)ASS'Y SCK4198-00A 1100000000000000 6.2.2 ISG board 6.2.3 ISR board 1000000000000 IS BOARD (3-CCD BLOCK) 6-3

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| ICI : CCD for B-ch | UPD3540D(NTSC) | UPD3545D(PAL)

IS SCHEMATIC (SA BOARD) 6-4 6-4 (SA BOARD)

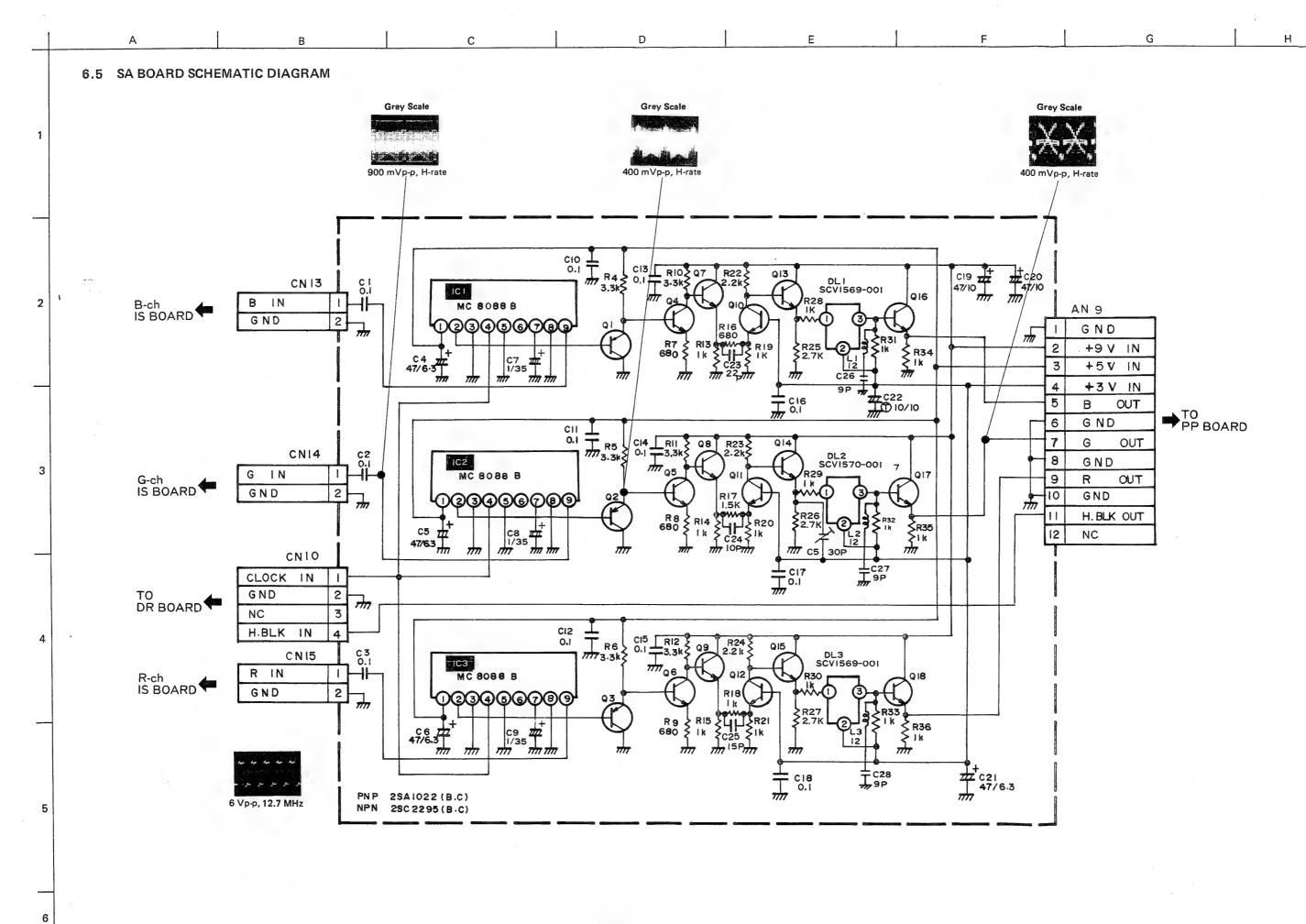
6

IS SA A B C D

6.4 SA CIRCUIT BOARD

SA BOARD SA

6-5 (IS SCHEMATIC)



DRI, DR2 6.6 DR1/DR2 CIRCUIT BOARDS - DR1 board -X : Cut off pattern V SUB - DR2 board -VL VH(S)

6-7

SA

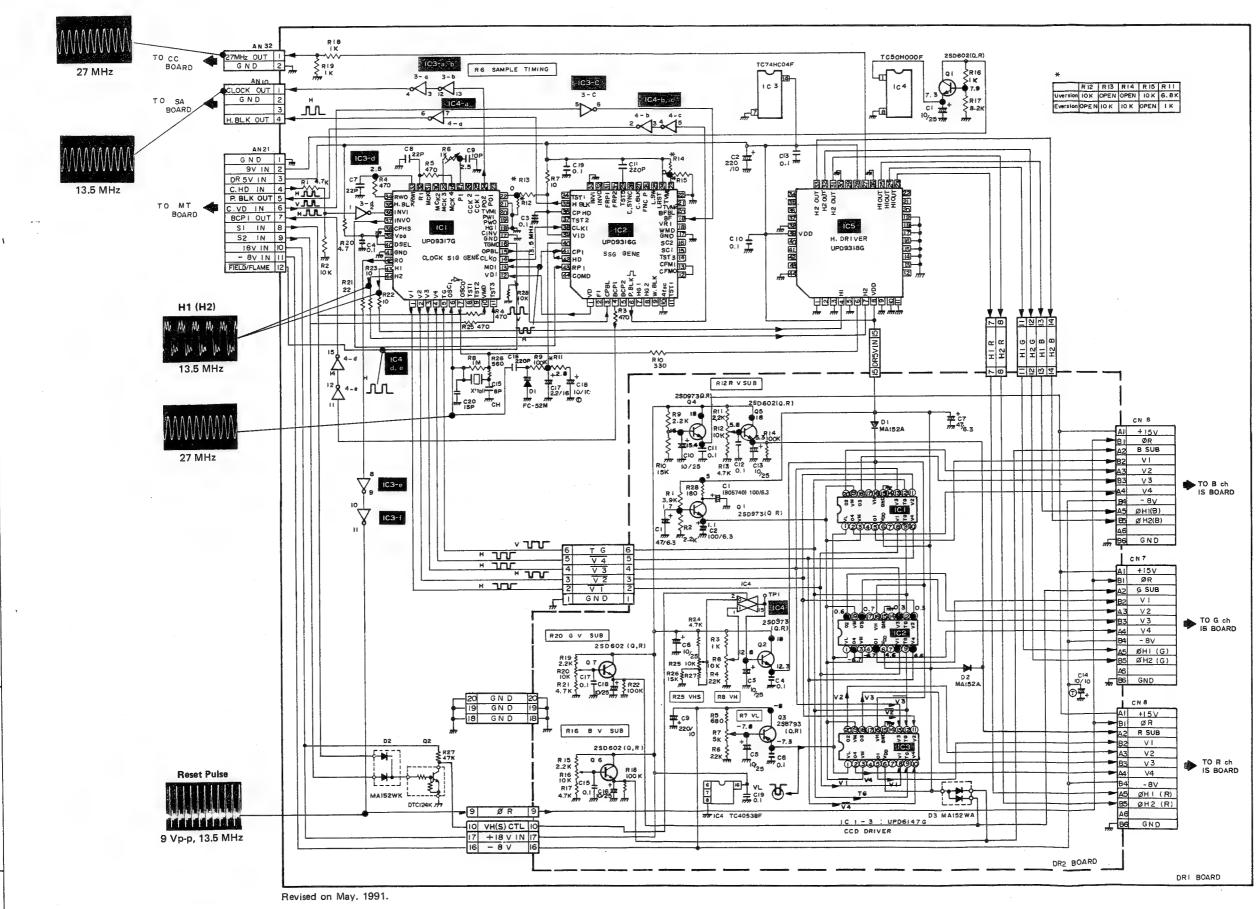
6-7 DR1/DR2 BOARD (SA SCHEMATIC)

X : Cut off patterm

Revised on Aug. 1989.

92

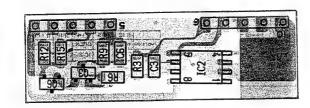
6.7 DR1/DR2 BOARD SCHEMATIC DIAGRAM

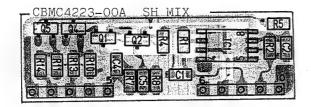


A B C DRI, DR2 PP E F G H

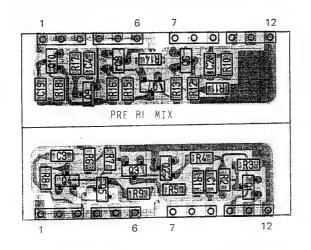
6.8 P. P CIRCUIT BOARD

- SH MIX board (CBM2) [CBMC4223-00A] -

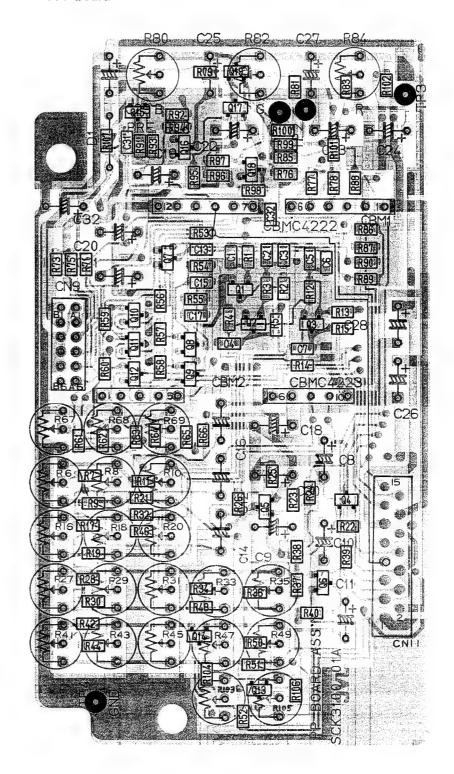


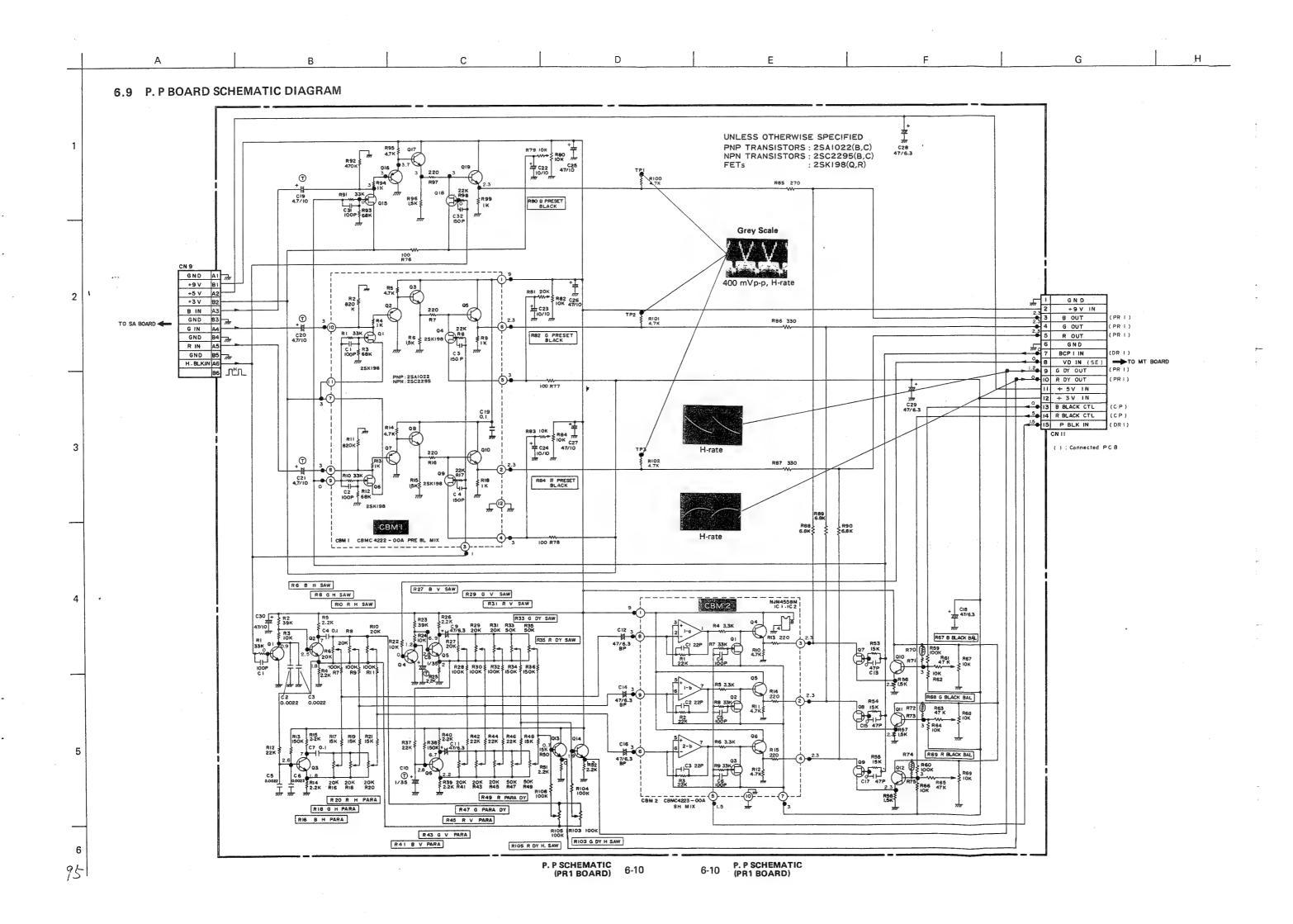


- PRE BL MIX board (CBM1) [CBMC4222-00A] -



- P. P board -

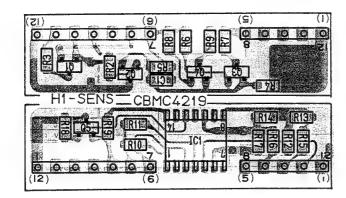




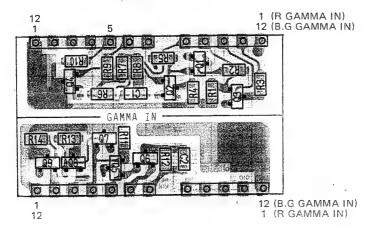
A B C PP PRI E G H

6.10 PR1 CIRCUIT BOARDS

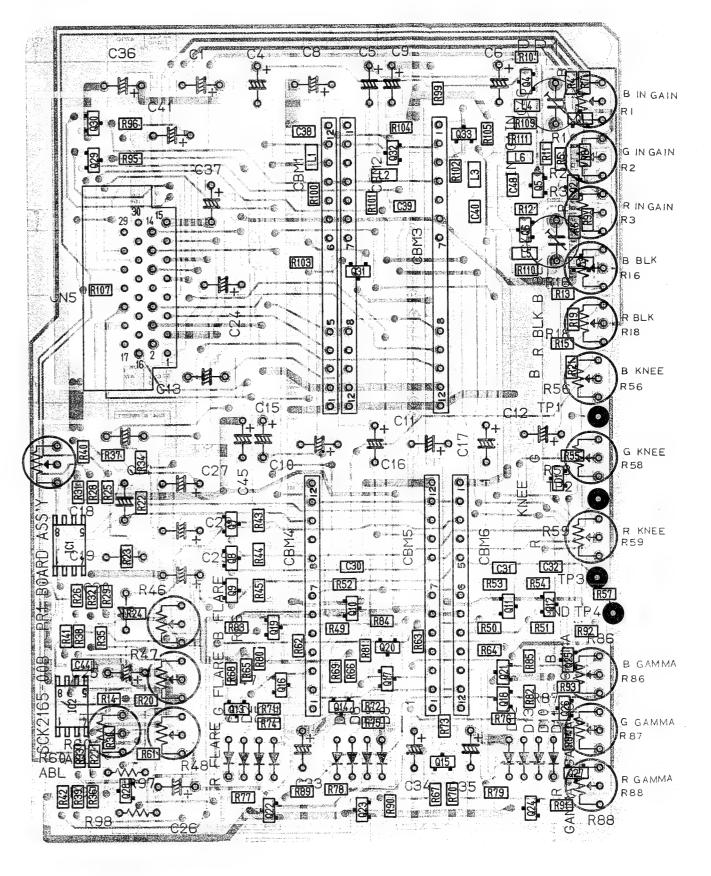
- B HI-SENS board (CBM1) [CBMC4219-03A] -
- G HI-SENS board (CBM2) [CBMC4219-02A] -
- R HI-SENS board (CBM3) [CBMC4219-01A] -



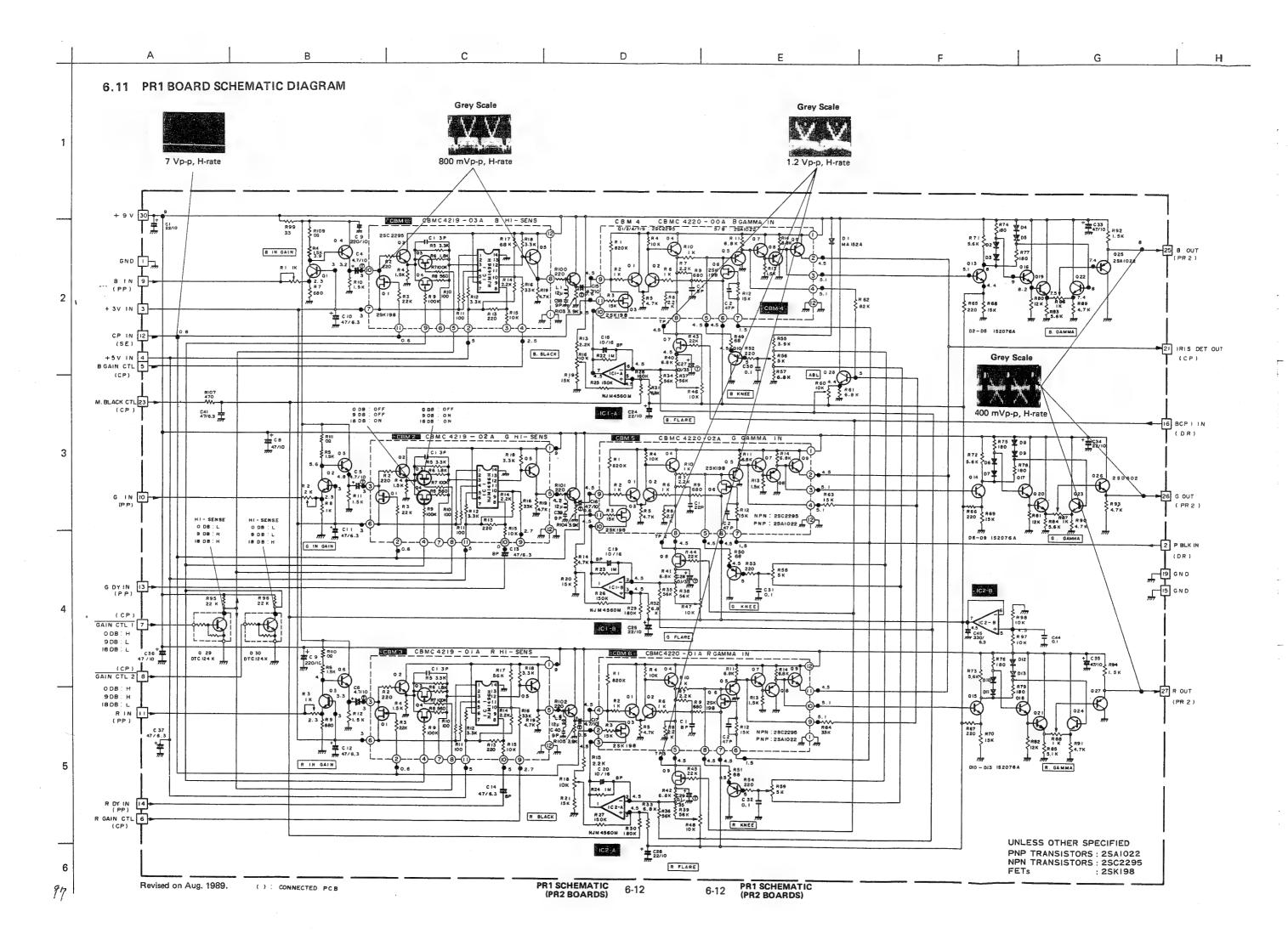
- B GAMMA IN board (CBM4) [CBMC4220-00A] -
- R GAMMA IN board (CBM6) [CBMC4220-01A] -
- G GAMMA IN board (CBM5) [CBMC4220-02A] -



- PR1 board -

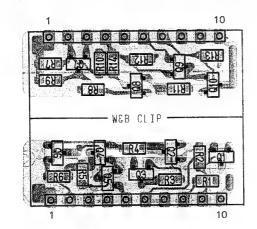


6-11

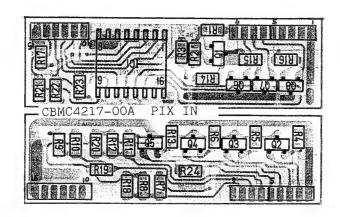


6.12 PR2 CIRCUIT BOARDS

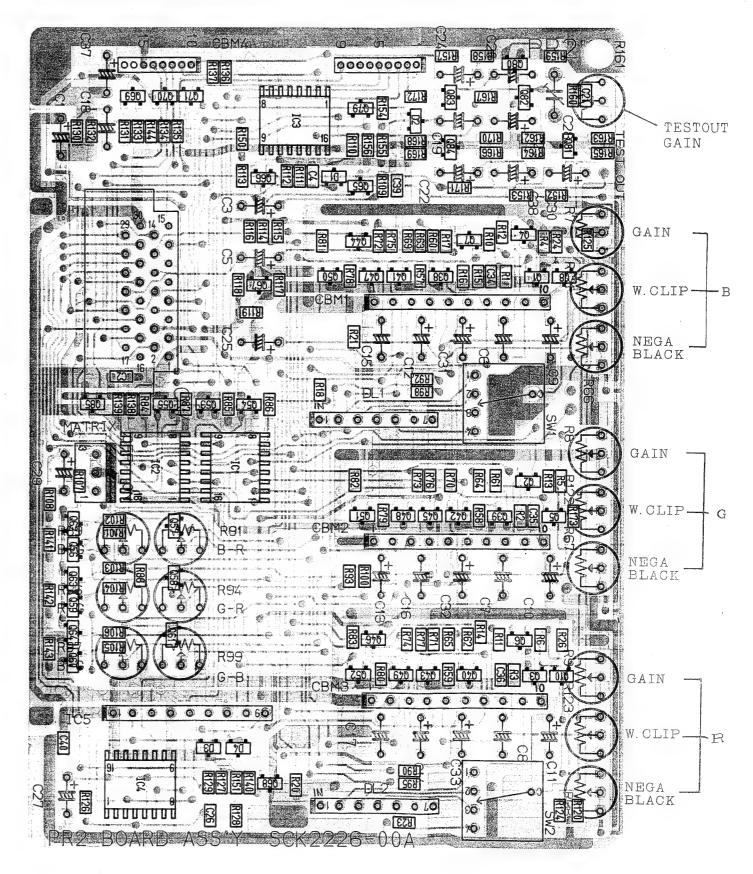
- W & B CLIP board (CBM1/CBM2/CBM3) [CMBC4218-00A]

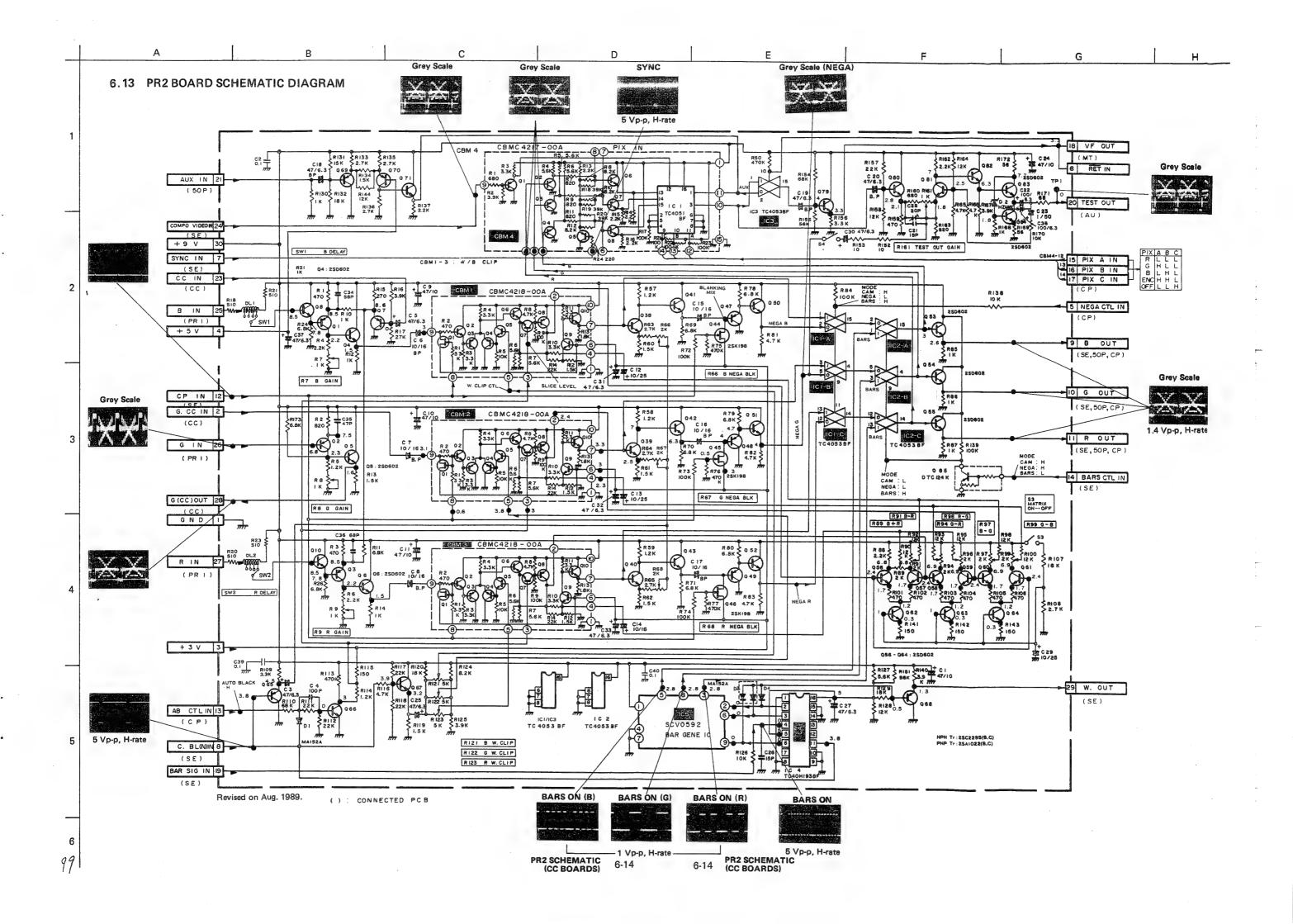


- PIX IN board (CBM4) [CBMC4217-00B] -



- PR2 board -



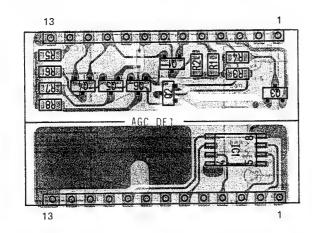


A B C PR2 CC E F G H

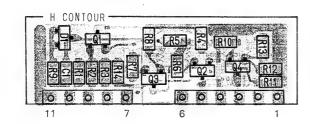
6.14 CC CIRCUIT BOARDS — CC1 board —

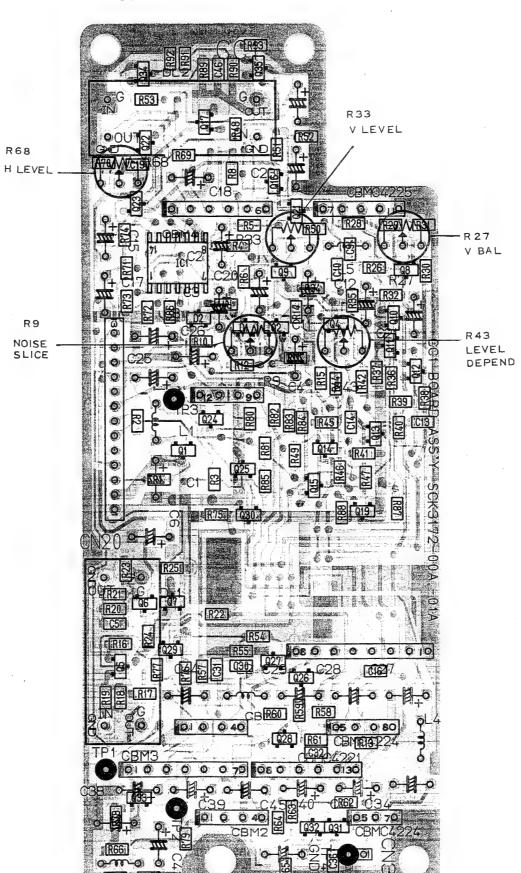
- AGC AMP board (CBMC1/CBM2) [CBMC4224-00A] —

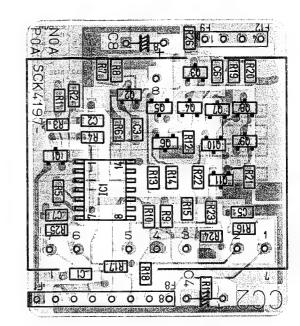
- AGC DET board (CBM3) [CBMC4221-00A] -

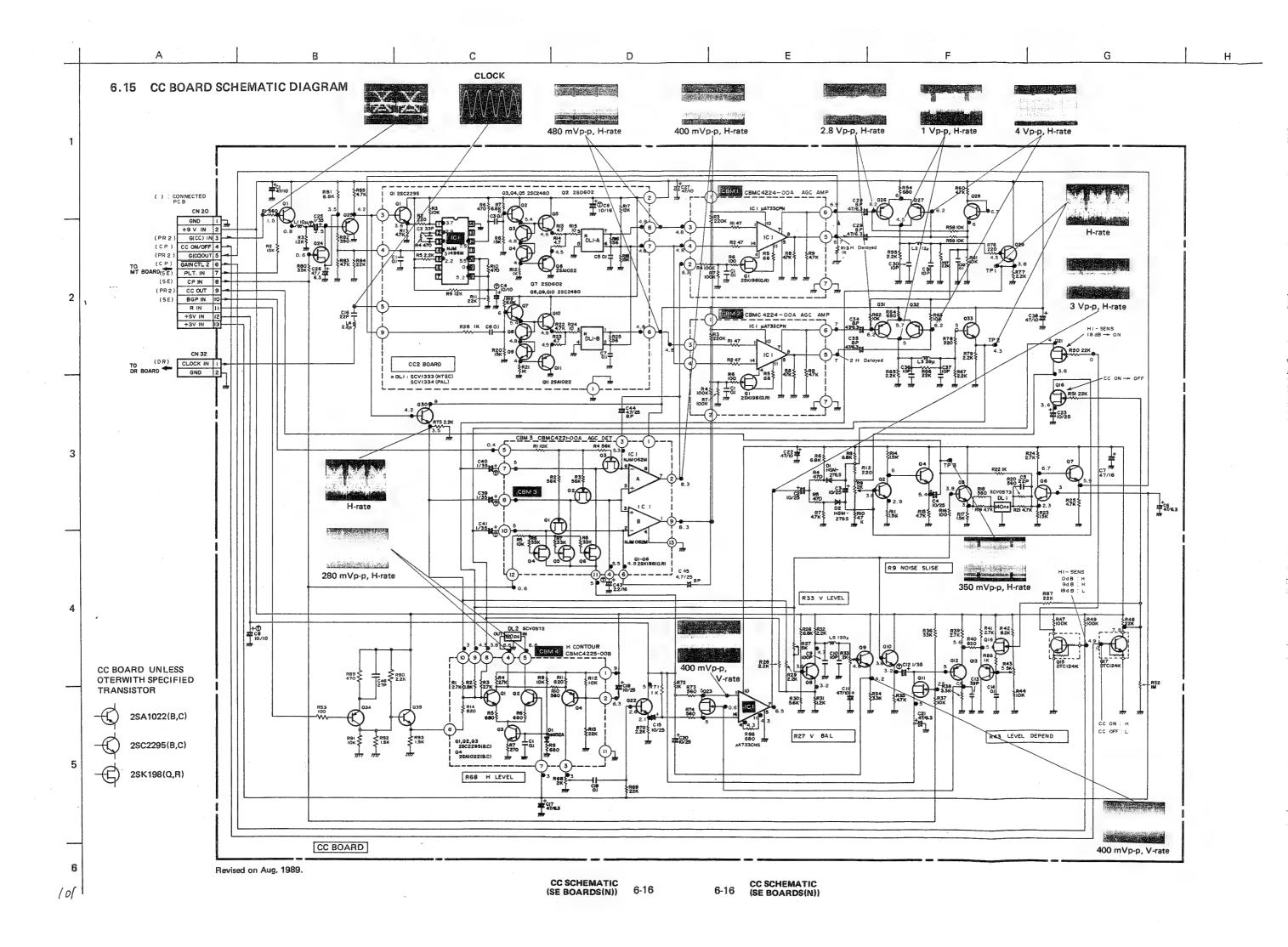


- H CONTOUR board (CBM4) [CBMC4225-00B] -









SE CC (NTSC) 6.16-N SE CIRCUIT BOARDS (NTSC) - SE-N board -- R-Y board (CBM1) [CBMC4299-N0A] -- B-Y board (CBM2) [CBMC4299-N1A] -- SC SHIFT board (CBM3) [CBMC4301-00A] -- ZEBRA SUB board -050 080 IC 2 TC4053BF

SE BOARDS(N) (CC SCHEMATIC) 6-17-N

SC84476-001 ZEBRA/PWB

040/010

ZEBRA SET

NJ M 319

Q1 - Q5 2SC 2295 (B,C)

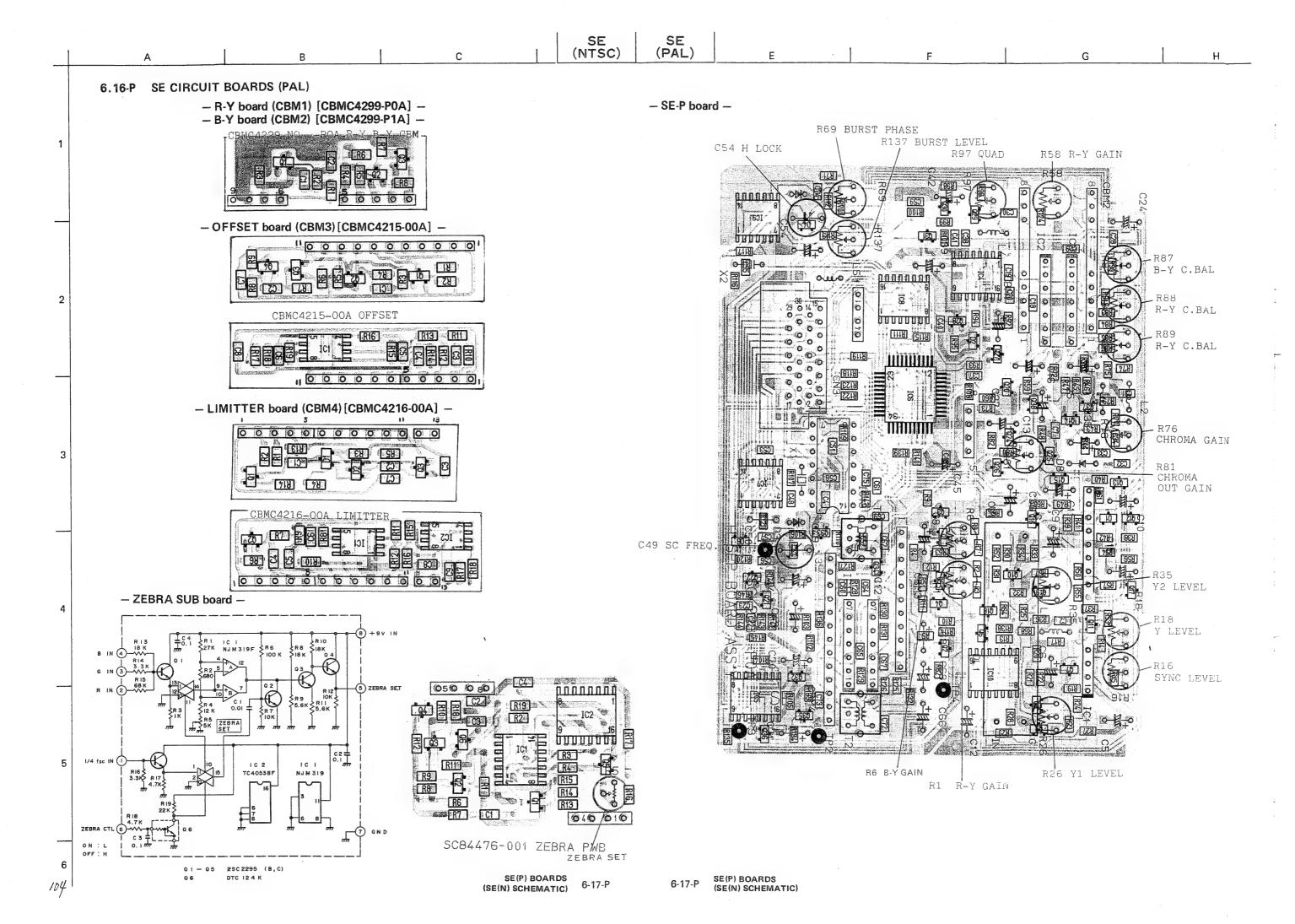
102

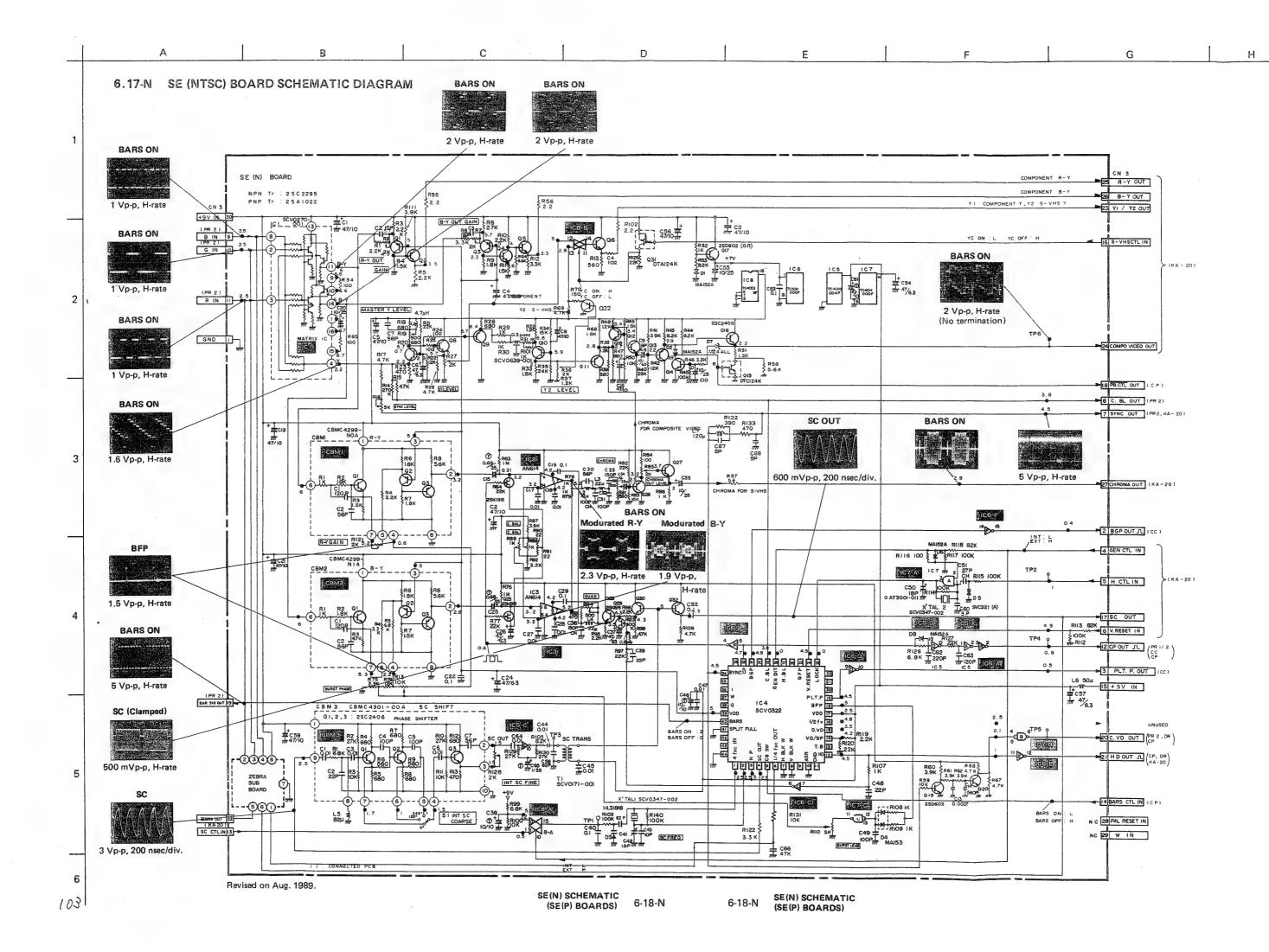
DTC 124 K

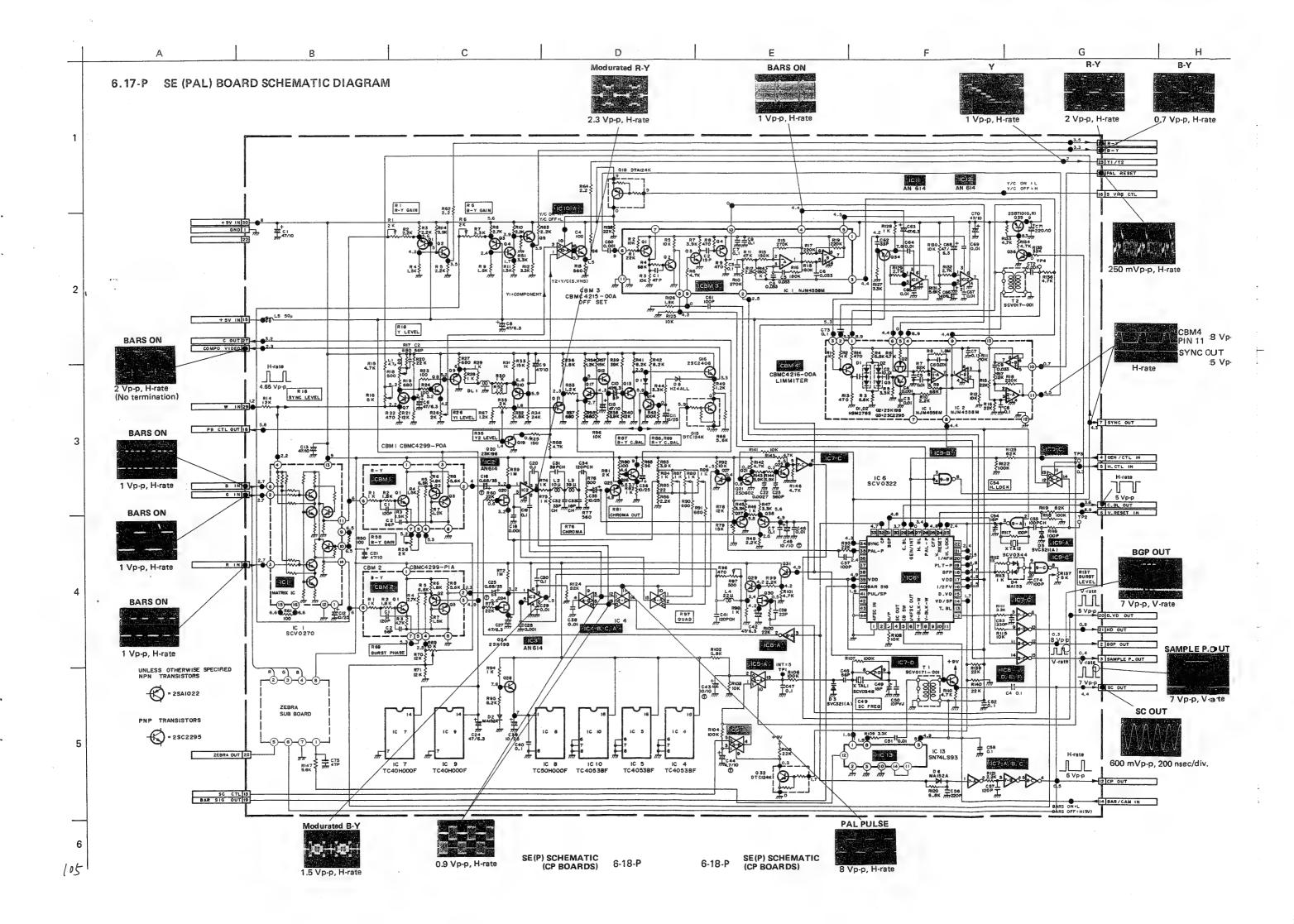
6-17-N SE BOARDS(N) (CC SCHEMATIC)

50 0 0 0 0

0160 0 0 0 0 0 0 0 0 0 0 0 0

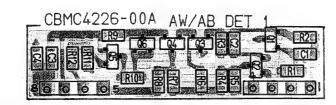




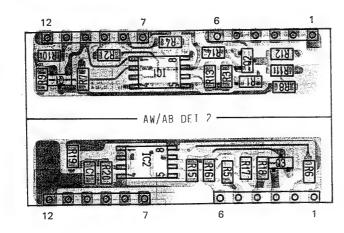


6.18 CP CIRCUIT BOARDS

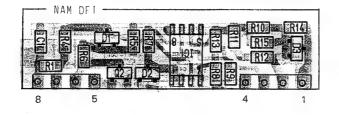
- AW/AB DET1 board (CBM1/CBM2/CBM3)[CBMC4226-00A] -

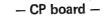


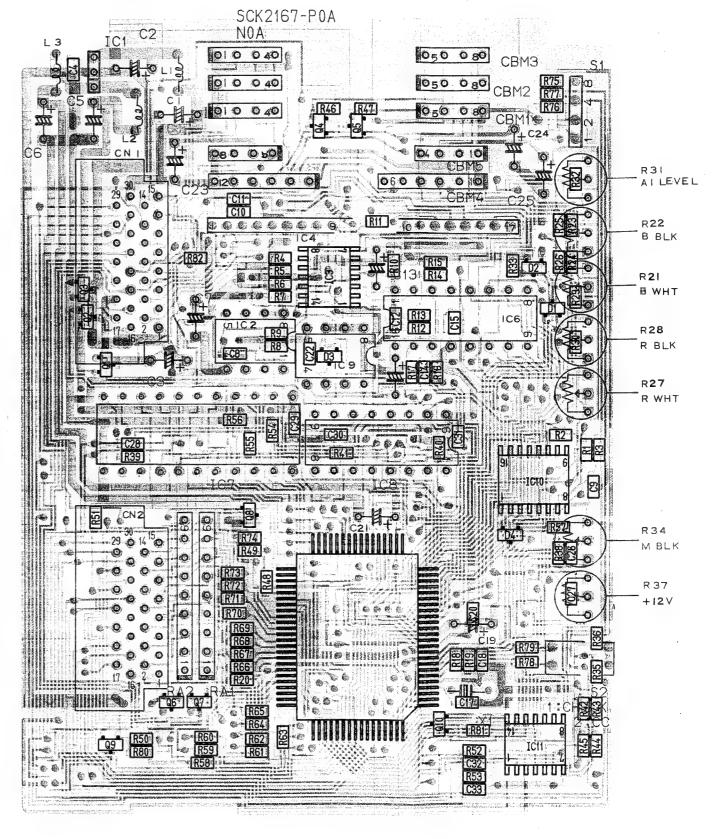
- AW/AB DET2 board (CBM4) [CBMC4306-00A] -

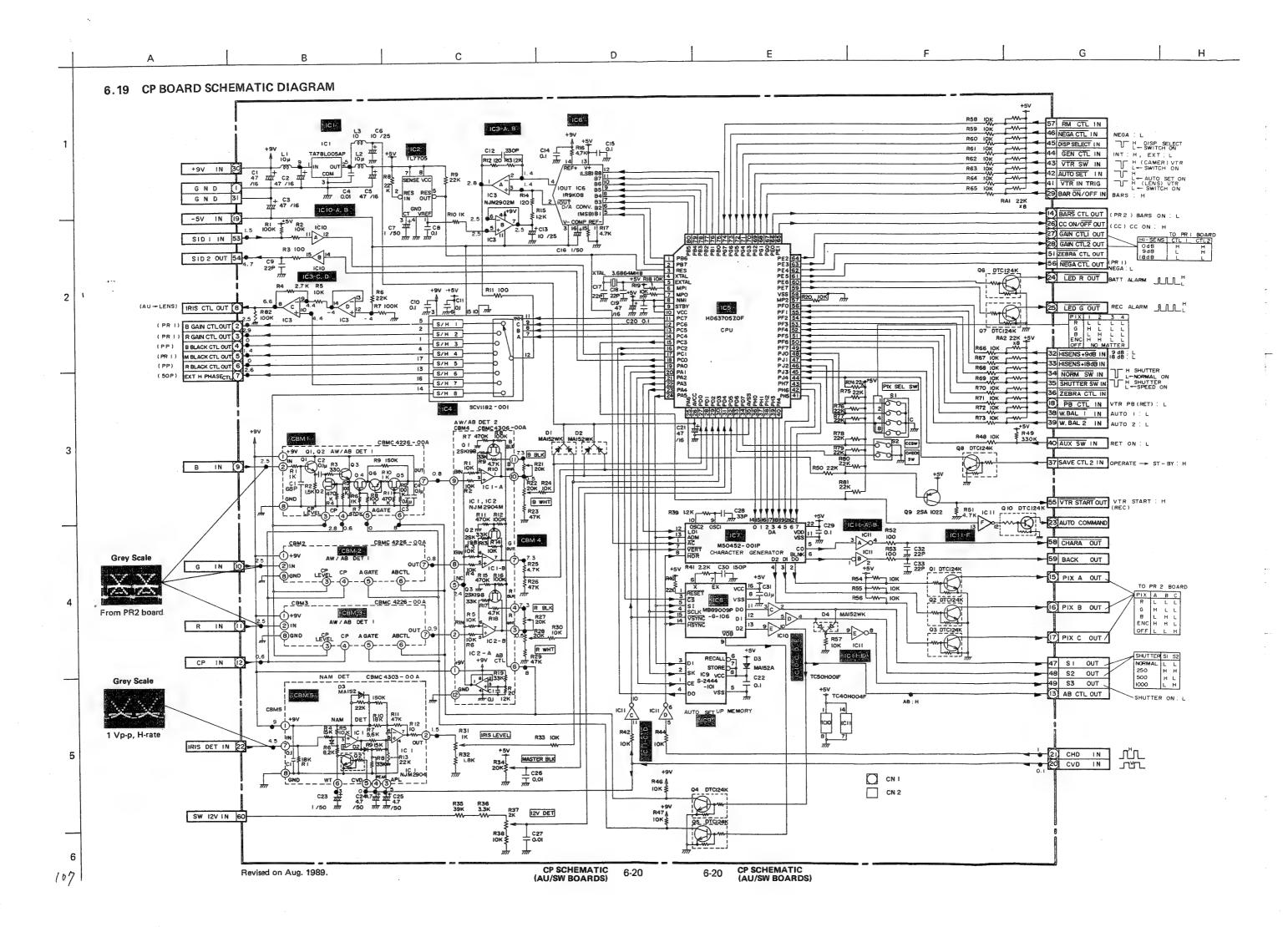


- NAM DET board (CBM5) [CBMC4303-00A] -





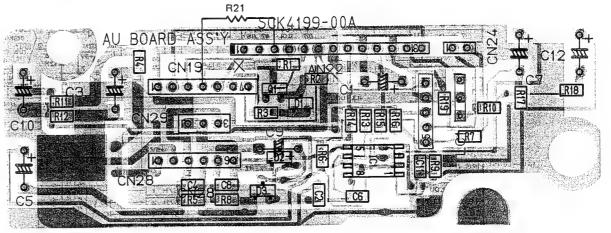




 CP
 AU SW4
 A
 B
 C
 D

6.20 AU/SW4 CIRCUIT BOARDS

AU board —



X : Cut off pattern

- SW4 board -

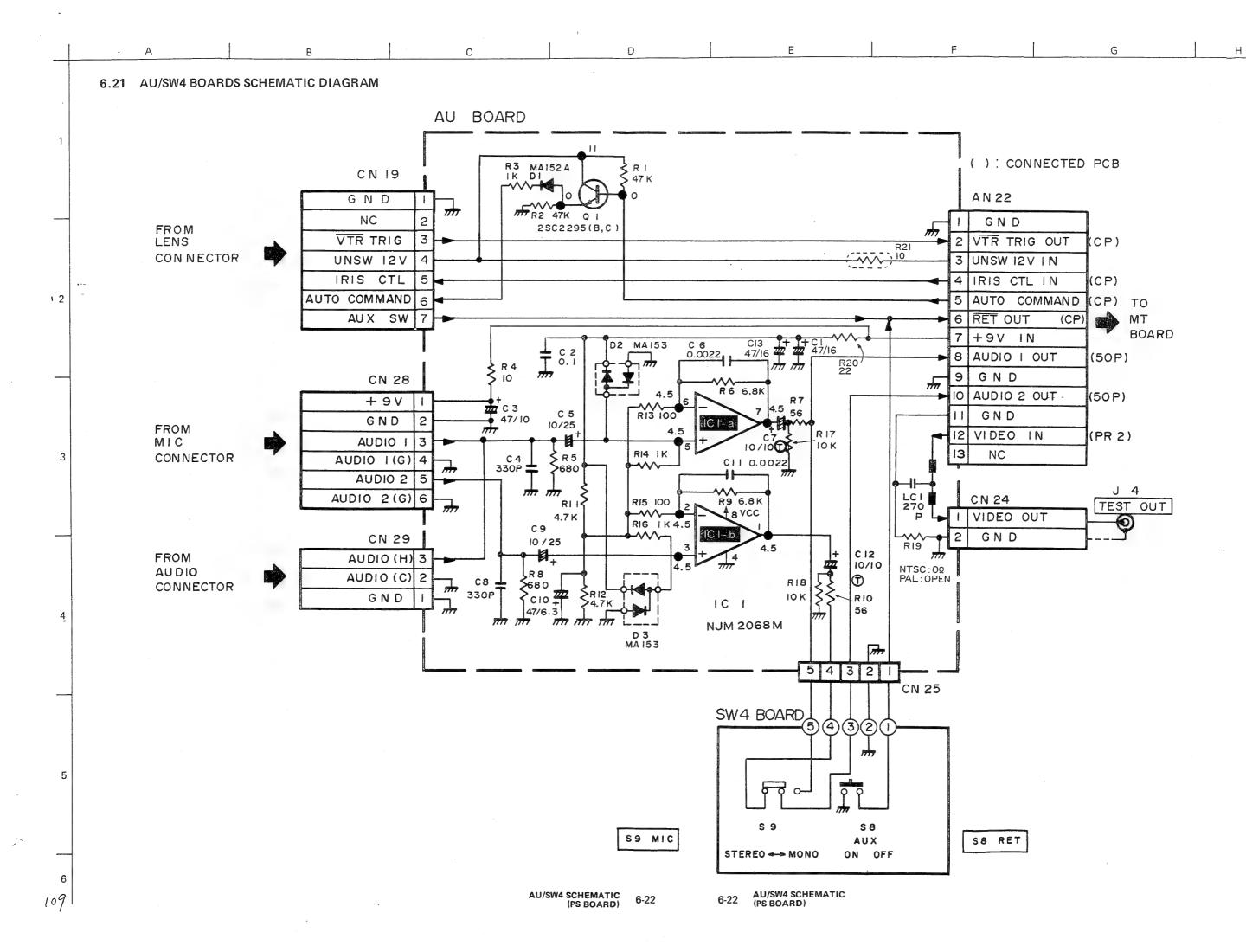


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156

6-21 AU/SW BOARDS (CP SCHEMATIC)

108



AU SW4 PS A B C D

6.22 PS CIRCUIT BOARD

1

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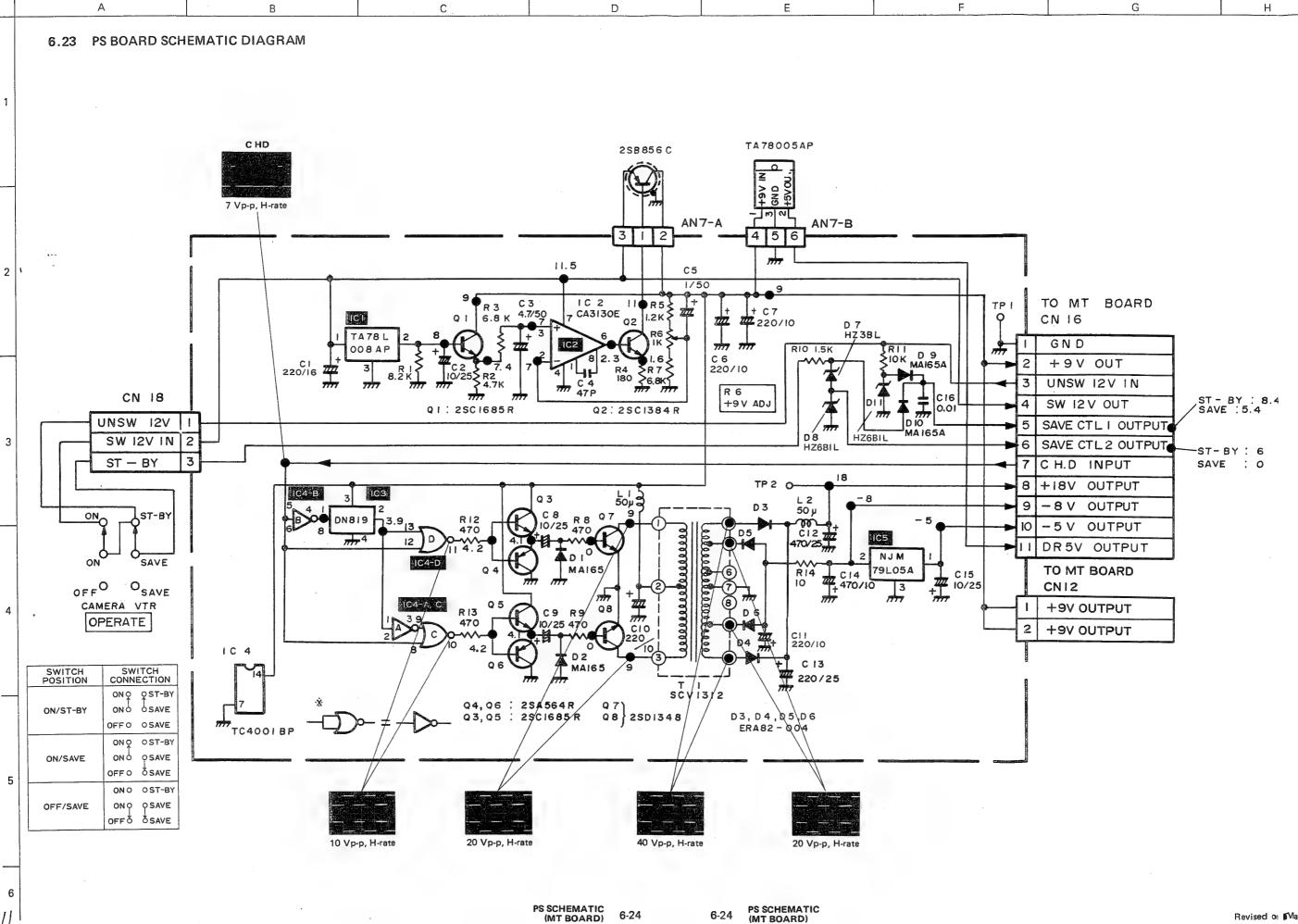
3

4

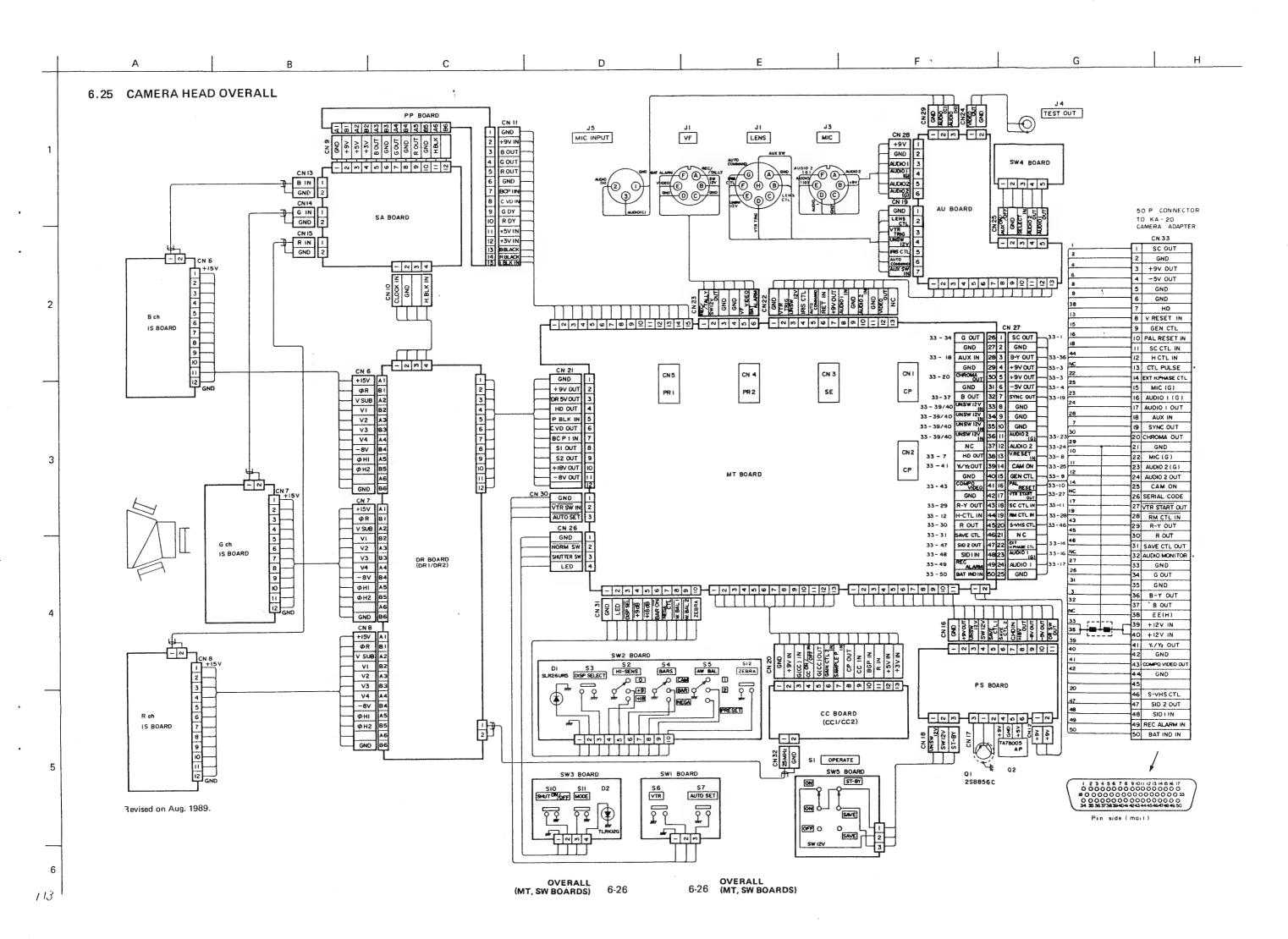
5

PS BOARD
6-23 (AU/SW4 SCHEMATIC)

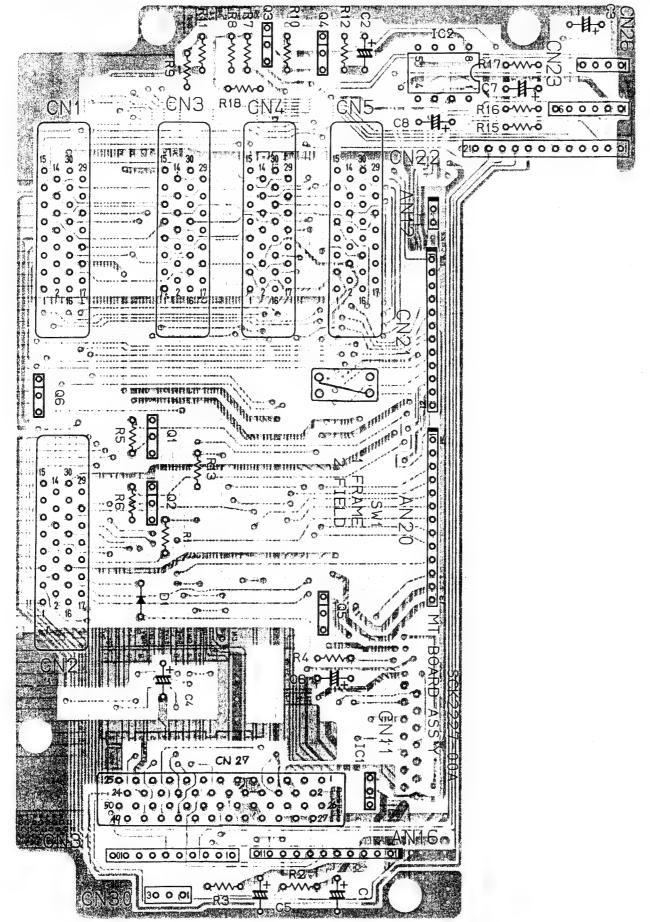
110



(MT BOARD)



6.26 MT CIRCUIT BOARD

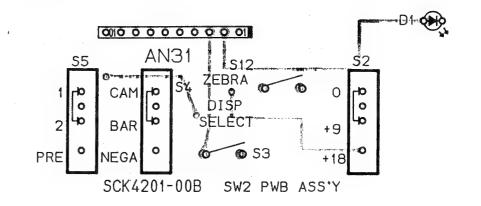


6.27 SW CIRCUIT BOARDS

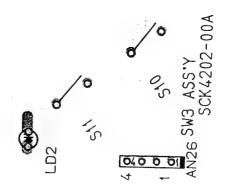
- SW1 board -



- SW2 board -



- SW3 board -



- SW5 board -



SECTION 7 ELECTRICAL PARTS LIST

SAFETY PRECAUTION

Parts identified by the $\, \triangle \,$ symbol are critical for safety. Replace only with specified part numbers. For maximum reliability and performance, all other replacement parts should be identical to those specified.

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS:

RESISTORS — All resistance values are in ohms (Ω).

: 1000

: 1 000 000

CR : Carbon Resistor

VR : Variable Resistor (Potentiometer)

MFR : Metal Film Resistor Chip R : Chip Resistor .

CAPACITORS — All capacitance values are in μ F, unless otherwise indicated.

: μμF

C Cap : Ceramic Capacitor E Cap : Electrolytic Capacitor FM Cap: Film Mica Capacitor MY Cap: Mylar Capacitor

NP Cap: Non-polar Capacitor T Cap : Tantalum Capacitor TR Cap: Trimmer Capacitor

MP Cap : Metalized Paper Capacitor

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7.1	VP board assembly	1 5	0588888

Sym		Part No.	Part Name	Description		Symbol No.	Part No.	Part Name	Description	
IC	, ,	C4053BP	IC	TOSHIBA		C17	QER41EM-106	E Cap	. •	25 V
ic:		N75158P	IC	TEXAS		C18	QER41EM-106	E Cap	· -	25 V
1			IC	TEXAS	11	C19	QER41AM-476	E Cap	10	25 V
IC:		N75157P	IC	TOSHIBA	11	C20	QER41HM-105	E Cap	1	50 V
IC.		A78L005AP		JRC		020				
IC	5 1	NJM4556D	IC	JAC		C21	QER41EM-106	E Cap	10	25 V
						C22	QER41AM-476	E Cap	47	10 V
						C23	QER41EM-106	E Cap	10	25 V
σ.	1 2	2SA564(R)	Transistor	MATSUSHITA				E Cap		3.3 V
Q	2 2	2SA564(R)	Transistor	MATSUSHITA		C24	QER40JM-476	E Cap		3.3 V
Q:	3 2	2SA564(R)	Transistor	MATSUSHITA		C25	QER40JM-476	E Cap		5.3 V
Q4	4 3	2SB793(Q.R)	Transistor	MATSUSHITA	+	C26	QER40JM-476	i '	10	25 V
						C27	QER41EM-106	E Cap	10	20,
D	, İ,	HZ9C1L	Zener Diode	HITACHI						
D		MA165TA	Diode	MATSUSHITA		S1	SCV1335-004	Dip Switch	Y/C, REG, At	JTO
D		HZ4ALL	Zener Diode	HITACHI					COMPO	
D.	3	nz4ALL	Zene. Diode							
						CN34	SCV0501-001	Connector	30 Pin	
R	1	QRD161J-472	CR	4.7 K 1/6 W	1 1					
R:	2	QVPB614-501	VR	500 G/Y LEVEL	-					
R:	3	QRD161J-750	CR	75 1/6 W	/					
R		QRD161J-472	CR	4.7 K 1/6 W	/					
R	t	QVPB614-501	VR	500 R /R-Y/CHROMA LEVE	L					
R	- 1	QRD161J-750	CR	75 1/6 W	v	●CBM1	CBMC4297-00A	VIDEO SW CBM		
R	-	QRD161J-472	CR	4.7K 1/6W	v	ļ				
R		QVPB614-501	VR	500 B/B-Y LEVE	L	İ		1	1	
R	-	QRD161J-750	CR	75 1/6 W	v	IC1	TC4053BF	1C	TOSHIBA	
1	-	QRD161J-472	CR	4.7 K 1/6 V	1	1				
K	10	UND 1013-472	Cit	1						
l R	11	QRD161J-151	CR	150 1/6 V	V					
1	12	QRD161J-104	CR	100 K 1/6 V	V	Q1	2SC2295(B.C)	Transistor	MATSUSHITA	
	13	QRD161J-222	CR	2.2 K 1/6 V	٧	Q2	2SC2295(B.C)	Transistor	MATSUSHITA	
1	14	QRD161J-103	CR	10K 1/6V	v	03	2SC2295(B.C)	Transistor	MATSUSHITA	
i i	15	QRD161J-104	CR	100 K 1/6 V	v	Q4	2SC2295(B.C)	Transistor	MATSUSHITA	
	116	QRD161J-103	CR	10K 1/6V	v I	Q5	2SC2295(B.C)	Transistor	MATSUSHITA	
- 1	17	QRD161J-103	CR	10K 1/6V	v l	0.6	2\$C2295(B.C)	Transistor	MATSUSHITA	7
1	i i	QRD161J-680	CR	68 1/6 V						
	118		CR	15K 1/6V	- 1					
l l	119	QRD161J-153 QRD161J-223	CR	22 K 1/6 V	- 1	1				
	120	QRD1013-223	Ch	1221		D1	MA152WA	Diode	MATSUSHITA	4
		0004011000	CR	3.3 K 1/6	w					
1	321	QRD161J-332	_	220 1/6	- 1			1		
1	322	QRD161J-221	CR							
· ·	323	QRD161J-221	CR			R1	NRSA02J-153	CR	1.5 K 1.	/10 W
F	R24	QVPB614-102	VR			R2	NRSA02J-123	CR	12 K 1	/10 W
1	325	QRD161J-152	CR			R3	NRSA02J-101	CR		/10 W
F	R26	QVPB614-102	VR	1 K R-Y LEVE		R4	NRSA02J-222	CR	1	/10 W
F	₹27	QRD161J-152	CR	1.5 K 1/6		R5	NRSA02J-102	Chip R	i	/10 W
	R28	QRD161J-472	CR	4.7 K 1/6	W	1		Chip R		/10 W
ł						R6	NRSA02J-101	Chip R	1	/10 W
						R7	NRSA02J-101	Chip R	1.00	/10 W
(C1	QEPAOJM-476	E Cap	47 6.3	- 1	R8	NRSA02J-222	1		/10 W
	C2	QETA1AM-227	E Cap	220 10	- 1	R9	NRSA02J-102	Chip R	1 ' ' '	/10 W
	C3	QER41HM-105	E Cap	1 50	- 1	R10	NRSA02J-101	Chip R	100	/10 //
1	C4	QETA1AM-227	E Cap	220 10	1				1	/10 W
	C5	QETA1AM-227	E Cap	220 10	V	R11	NRSA02J-101	Chip R	1,00	
	C6	QER41HM-105	E Cap	1 50	V	R12	NRSA02J-222	Chip R	2.2 1	/10 W
	C7	QETA1AM-227	E Cap	220 10) V	R13	NRSA02J-102	Chip R	1 ' ''	/10 W
1	C8	QETA1AM-227	E Cap	220 10	V	R14	NRSA02J-105	Chip R	3 4 747	/10 W
	C9	QER41HM-105	E Cap	1 50	V	R15	NRSA02J-102	CR		1/10 W
	C10	QETA1AM-227	E Cap	220 10) V	R16	NRSA02J-102	CR	i	1/10 W
	C: U	GETATAIVI-227				R17	NRSA02J-102	CR	1 K 1	1/10 W
	C11	QER41AM-476	E Cap	1 '') V					
1	C12	QER41AM-476	E Cap	47 10) V					
	C13	QER41AM-476	E Cap	47 10) V	1				
	C14	QER41AM-476	E Cap	47 10) V	C1	NCT03CH-470	C Cap	47 P	50 \
- 1	C15	QER41HM-105	E Cap		V	C2	NCT03CH-680	C Cap	68 P	50 \
	C16	QER41EM-106	E Cap	l l	5 V	C3	NCT03CH-470	C Cap	47 P	50 \
	J . U	1 22113 1210 100				L				

1/10 W 1/10 W

1/10 W 1/10 W

1/10 W

1/10 W

1/10 W

1/10 W

1/10 W

1/10 W

1/10 W

1/10 W

1/10 W

1/10 W

1/10 W

1/10 W

50 V

50 V 50 V

Symbol No.	Part No.	Part Name	Descrip	otion	Symbol No.	Part No.	Part Name	Descr	iption
•CBM2 •CBM3 •CBM4	CBMC4213-00A CBMC4213-00A CBMC4213-00A	VIDEO OUT CBM VIDEO OUT CBM VIDEO OUT CBM			R14 R15 R16	NRSAO2J-104 NRSAO2J-104 NRSAO2J-104	Chip R Chip R Chip R	100 K 100 K 100 K	1/10 W 1/10 W 1/10 W
Q1 Q2 Q3 Q4	2SC2295(B.C) 2SC2295(B.C) 2SD602(Q.R) 2SD602(Q.R)	Transistor Transistor Transistor Transistor	MATSUSHI MATSUSHI MATSUSHI MATSUSHI	TA TA	C1	NCF21EZ-104	C Cap	0.1	25 V
D1	нzм6СТВ	Zener Diode	HITACHI		◆CBM6	CBMC4298-00A	SAVE CTL CBM	-	
					IC	TC4053BF	IC	TOSHIBA	
R1 R2 R3 R4 R5 R6 R7 R8 R9 R1O	NRSA02J-222 NRSA02J-152 NRSA02J-123 NRSA02J-472 NRSA02J-153 NRSA02J-392 NRSA02J-392 NRSA02J-560 NRSA02J-560 NRSA02J-271	Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R	2.2 K 1.5 K 12 K 4.7 K 15 K 3.9 K 3.9 K 56 56 270	1/10 W 1/10 W	Q1 Q2 Q3 Q4 Q5 Q6	- - DTC124K DTA124K DTC124K	Transistor Transistor Transistor	ВОНМ ВОНМ ВОНМ	
C1	NCF21EZ-104	C Cap	0.1	25 V	R1 R2 R3 R4 R5 R6 R7	- - - - NRSA02J-222 NRSA02J-223 NRSA02J-104	- - - Chip R Chip R Chip R	2.2 K 22 K 100 K 100 K	1/10 W 1/10 W 1/10 W 1/10 W
●CBM5	CBMC4269-00A		TOCHIBA						
1C1 Q1 Q2 Q3 Q4 Q5	TC4S66F 2SC2295(B.C) DTC124K 2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C)	Transistor Transistor Transistor Transistor Transistor Transistor	MATSUSH MATSUSH MATSUSH MATSUSH	ATIA ATIA	•СВМ8	CBMC4304-00A	VIDEO AMP/DET C8M		
D1 D2	MA152A MA152A	Diode Diode	MATSUSI MATSUSI		Q1 Q2 Q3 Q4	2SA1022(B.C) 2SC2295(B.C) 2SC2406(B.C) DTC124K	Transistor Transistor Transistor Transistor	MATSUS MATSUS MATSUS ROHM	SHITA
R1 R2 R3	NRSA02J-393	Chip R	39 K	1/10 W	D1	MA152A	Diode	MATSU	SHITA
R4 R5 R6 R7 R8 R9 R10	NRSA02J-123 NRSA02J-103 NRSA02J-103 NRSA02J-104 NRSA02J-104	Chip R Chip R Chip R Chip R Chip R Chip R	12 K 10 K 10 K 100 K 100 K	1/10 W 1/10 W 1/10 W 1/10 W 1/10 W	R1 R2 R3 R4 R5 R6 R7	NRSA02J-393 NRSA02J-123 NRSA02J-822 NRSA02J-822 NRSA02J-104 NRSA02J-562 NRSA02J-122	CR CR CR CR CR CR	39 K 12 K 8.2 K 8.2 K 100 K 5.6 K 1.2 K	1/10W 1/10W 1/10W 1/10W 1/10W 1/10W 1/10W
R11 R12 R13		Chip R Chip R Chip R	3.3 K 3.3 K 100 K	1/10 W 1/10 W 1/10 W					

				7.2 GL	board assembly.	1 6	16
Symbol No.	Part No.	Part Name	Description	Symbol No.	Part No.	Part Name	Description
• CBM9 IC1 IC2 IC3	CBMC4311-00A TC40H166F TC4020BF TC40H000F	SID GENE CBM IC IC IC	TOSHIBA TOSHIBA TOSHIBA	IC1 IC2 IC3 IC4 IC5 IC7	TC4053BP TC4528BP TC4528BP TC4528BP HD14046BP HA11247	IC IC IC IC. IC	TOSHIBA TOSHIBA TOSHIBA TOSHIBA HITACHI
Q1 Q2 Q3 Q4	2SC2295(B.C) DTC124K DTC124K DTC124K DTC124K	Transistor Transistor Transistor Transistor Transistor	MATSUSHITA ROHM ROHM ROHM	Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8	2SA564(R) 2SC1685(R.S) 2SA777(R) 2SA564(R) 2SA564(R) 2SC1685(R.S) 2SA719R DTC124ES	Transistor Transistor Transistor Transistor Transistor Transistor Transistor Transistor Transistor	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA ROHM
R1 R2 R3 R4 R5 R6 R7 R8 R9	NRSA02J-224 NRSA02J-104 NRSA02J-103 NRSA02J-223 NRSA02J-223 NRSA02J-223 NRSA02J-332 NRSA02J-103 NRSA02J-103	Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip Chip R Chip R	220 K 1/10 W 100 K 1/10 W 10 K 1/10 W 22 K 1/10 W 22 K 1/10 W 22 K 1/10 W 3.3 K 1/10 W 10 K 1/10 W 10 K 1/10 W 1/1	D1 D2 D3 D4 D5 D6 D7 R1 R2 R3 R4 R5 R6 R7 R8 R9 R10	MA165 HZ4ALL MA165 MA165 MA165 HZ6(2C)L MA165 QRD161J-472 QRD161J-223 QRD161J-223 QRD161J-333 QRD161J-333 QRD161J-822 QRD161J-562 QRD161J-681 QRD161J-681 QRD161J-182	Diode Zener Diode Diode Diode Diode Zener Diode Cener Diode CR CR CR CR CR CR CR CR CR CR CR CR CR	MATSUSHITA HITACHI MATSUSHITA MATSUSHITA MATSUSHITA HITACHI MATSUSHITA HITACHI MATSUSHITA 4.7 K 1/6 W 22 K 1/6 W 22 K 1/6 W 33 K 1/6 W 33 K 1/6 W 2.2 K 1/6 W 3.5 K 1/6 W 3.6 K 1/6 W 3.7 K 1/6 W 3.8 K 1/6 W 3.8 K 1/6 W 3.8 K 1/6 W 3.8 K 1/6 W 3.8 K 1/6 W 3.8 K 1/6 W 3.8 K 1/6 W 3.8 K 1/6 W 3.8 K 1/6 W 3.8 K 1/6 W 3.8 K 1/6 W 3.8 K 1/6 W
				R11 R12 R13 R14 R15 R16 R17 R18 R19 R20 R21 R22 R23 R24 R25 R26 R27 R28 R29	QRD161J-153 QRD161J-563 QRD161J-273 QRD161J-103 QRD161J-681 QRV141F-2201 QRD161J-102 QRD161J-105 QRD161J-332 QRD161J-332 QRD161J-563 QRD161J-563 QRD161J-273 QVPB614-503 QRV141F-6802 QRV141F-6802 QRV141F-6802 QRV141F-6802 QRV141F-6802 QRV141F-6802 QRV161J-472 QVPB614-501	CR CR CR CR CR CR CR CR CR CR CR CR CR C	15 K 1/6 W 56 K 1/6 W 27 K 1/6 W 10 K 1/6 W 10 K 1/6 W 2.2 K 1/4 W 10 K 1/6 W 1 M 1/6 W 3.3 K 1/6 W 3.3 K 1/6 W 56 K 1/6 W 56 K 1/6 W 50 K BJ RST TIMIN 68 K 1/4 W 82 K 1/4 W 4.7 K 1/6 W 500 SC LOCK
				R30 R31 R32 R33	QRD161J-562 QRD161J-821 QRD161J-391 QRD161J-152	CR CR CR CR	5.6 K 1/6 W 820 1/6 W 390 1/6 W 1.5 K 1/6 W

Symbol	Part No.	Part Name	Descri	ption	Symbol No.
R34 R35 R36 R37 R38 R39	QRD161J-271 QRD161J-472 QRD161J-472 QRD161J-123 QRD161J-103 QRD161J-221 QRD161J-102 QRD161J-563	CR CR CR CR CR CR CR		1/6 W 1/6 W 1/6 W 1/6 W 1/6 W N (U ver.) N (E ver.)	C42 C43 L1 L2 L3 L4
R41 R42 R43 R44 R45 R46 R47 R48	QRD161J-103 QRD161J-103 QRD161J-100 QRD161J-100 QRD161J-221 QRD161J-103 QRD161J-103 QRD161J-334 QRD161J-100	CR CR CR CR CR CR CR CR	10 K 10 K 10 K 10 220 10 K 10 K 330 K	1/6 W 1/6 W 1/6 W 1/6 W 1/6 W 1/6 W 1/6 W 1/6 W	CN35
C1 C2 C3 C4 C5 C6 C7 C8 C9	QER41EM-106 QER41AM-476 QEPA1HM-105 QERA1AM-476 QFN31HJ-103 QCT25UJ-220 QFN41HJ-103 QCT25UJ-151 QFN41HJ-103 QER41AM-476	E Cap E Cap E Cap E Cap C Cap C Cap C Cap MY Cap C Cap MY Cap E Cap	10 47 1 47 0.01 22 P 0.01 150 P 0.01 47	25 V 6.3 V 50 V 6.3 V 50 V 50 V	Q2 Q3 Q4 Q5 Q6 Q7
C11 C12 C13 C14 C15 C16 C17 C18	QETA1AM-227 QETA1AM-227 QFN41HJ-102 QEP41CM-106 QEPA0JM-476 QER41AM-476 QCT25CH-181 QCT25CH-470 QCT25CH-220	E Cap E Cap MY Cap E Cap E Cap E Cap C Cap C Cap C Cap C Cap	220 220 0.001 10 47 47 180 P 47 22 P 56 P	10 V 10 V 50 V 16 V 6.3 V 10 V	R3 R4 R5 R6 R7 R8 R9 R10
C21 C22 C23 C24 C25 C26 C27 C27	QFN41HJ-333 QCT25CH-101 QEJ41AM-106 QER41EM-106 QEJ41AM-106 QEJ41AM-106 QFN41HJ-333 QEJ41VM-224 QFN41HJ-103	E Cap MY Cap C Cap E Cap E Cap E Cap E Cap T Cap MY Cap T Cap MY Cap	10 10 10 10 0.033 5 0.22 3	10 V 50 V ver. only) 10 V 50 V 10 V 10 V 0 V (U ver.) 55 V (E ver.)	R13 R14 R15 R16 R17 R18 R19 R20
C3 C3 C3 C3 C3 C3 C3 C3	1 QCT25UJ-101 2 QER41HM-105 3 QCT25UJ-101 4 QEPA1HM-105 5 QER41EM-106 6 QEPA1CM-106 7 QEJ41AM-106	C Cap E Cap E Cap E Cap E Cap	100 P 100 P 1 100 P 1 10 10 10	50 V 50 V 25 V 16 V 10 V	C3 C5 C6 C7
C3 C4	9 QEPA1CM-106 QER40JM-107	7 E Cap	10 100 47	16 V 6.3 V 6.3 V	IC1 IC2

Symbol			Dosesis	tion
No.	Part No.	Part Name	Descrip	
C42 C43	QER41EM-106 QFN41HJ-222	E Cap MY C ap	10 2200 P	25 V 50 V
L1 L2 L3 L4	SCV0331-390 SCV0331-220 SCV0331-120 SCV0331-220	Paeking Coil Paeking Coil Paeking Coil Paeking Coil	39 µH 22 µH 12 µH 22 µH	
T1	SCV0514-001	Trans	MIC Trans	
CN35	SCV0501-001	Connector	30 Pin	
◆CBM1	CBMC4211-00A	SYNC SEP CBM		
Q1 Q2 Q3 Q4 Q5 Q6 Q7	2SC1022(B.C) 2SC1022(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C) 2SC2295(B.C)	Transistor Transistor Transistor Transistor Transistor Transistor Transistor	MATSUSH MATSUSH MATSUSH MATSUSH MATSUSH MATSUSH	ITA ITA IITA IITA
R1 R2 R3 R4 R5 R6 R7 R8 R9	NRSA02J-103 NRSA02J-393 NRSA02J-102 NRSA02J-271 NRSA02J-560 NRSA02J-561 NRSA02J-332 NRSA02J-102 NRSA02J-563 NRSA02J-273	Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R	10 K 39 K 1 K 270 56 56 3.3 K 1 K 56 K 27 K	1/10 W 1/10 W 1/10 W 1/10 W 1/10 W 1/10 W 1/10 W 1/10 W 1/10 W 1/10 W
R11 R12 R13 R14 R15 R16 R17 R18 R19 R20	NRSA02J-152 NRSA02J-100 NRSA02J-562 NRSA02J-682 NRSA02J-392 NRSA02J-392 NRSA02J-472 NRSA02J-562 NRSA02J-332 NRSA02J-332	Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R	1.5 K 10 K 5.8 K 3.9 K 4.7 K 5.6 K 3.3 K	1/10 W 1/10 W 1/10 W 1/10 W 1/10 W 1/10 W 1/10 W 1/10 W 1/10 W 1/10 W
C3 C5 C6 C7	NCT03CH-150 NCB21HK-272 NCT03CH-561 NCF21EZ-104	C Cap C Cap C Cap C Cap	15 P 0.0027 560 P 0.1	50 V 50 V 50 V 25 V
●CBM	2 CBMB4212-00	ERROR AMP CB	м	
IC1 IC2	NJM4558M NJM4558M	IC IC	JRC JRC	

					7.3 CT	board assembly 1		
Symbol No.	Part No.	Part Name	Descript	ion	Symbol No.	Part No.	Part Name	Description
D1	MA152A	Diode	MATSUSHITA	Δ	R1 R2 R3	QVPB613-203 QRD161J-472 QVD161J-472	VR CR CR	20 K H PHNSE 4.7 K 1/6 W 4.7 K 1/6 W 820 1/6 W
R1 R2 R3 R4	NRSA02J-332 NRSA02J-682 NRSA02J-562 NRSA02J-224	Chip R Chip R Chip R Chip R Chip R	6.8 K 1 5.6 K 1 220 K 1	/10W /10W /10W /10W /10W	R4 R5 R6 R7 R8	QVD161J-820 QVPB613-202 QRD161J-104 QRD161J-104 QRD161J-154	CR VR CR CR CR	2 K SC FINE 100 K 1/6 W 100 K 1/6 W 150 K 1/6 W
R5 R6 R7 R8 R9 R10	NRSA02J-223 NRSA02J-104 NRSA02J-473 NRSA02J-473 NRSA02J-561 NRSA02J-273	Chip R Chip R Chip R Chip R Chip R	100 K 1 47 K 1 47 K 1 560 1	/10W /10W /10W /10W /10W	S1 S2 S3 S4	SCV0389-011 SCV0389-011 SCV1346-011 SCV0490-011	Slide Switch Slide Switch Slide Switch Slide Switch	SC COARSE VTR MODE AUDIO LEVEL
R11 R12 R13	NRSA02J-273 NRSA02J-333 NRSA02J-102	Chip R Chip R Chip R	33 K 1	1/10W 1/10W 1/10W	CN44	SCV1266-020	Connector	20 Pin
C1	NCF21EZ-104	C Cap	0.1	25 V	◆CBM5	CBMC4214-00A	SC PHASE CBM	
•СВМЗ	CBMC4305-00A	MIC AMP CBM			Q1 Q2 Q3 Q4	2SC2406(S. T) 2SC2406(S. T) 2SC2406(S. T) 2SA1022(B.C)	Transistor Transistor Transistor Transistor	MATSUSHITA MATSUSHITA MATSUSHITA MATSUSHITA
IC1 IC2	NJM4558M NJM4558M	IC IC	JRC JRC		R1 R2 R3	NRSA02J-102 NRSA02J-102 NRSA02J-561	Chip R Chip R Chip R	1 K 1/10 W 1 K 1/10 W 560 1/10 W
R1 R2 R3 R4 R5 R6 R7	NRSA02J-104 NRSA02J-104 NRSA02J-104 NRSA02J-104 NRSA02J-104 NRSA02J-104 NRSA02J-104	Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R Chip R	100 K 100 K	1/10 W 1/10 W 1/10 W 1/10 W 1/10 W 1/10 W 1/10 W 1/10 W	R4 R5 R6 R7 R8 R9	NRSA02J-821 NRSA02J-821 NRSA02J-561 NRSA02J-681 NRSA02J-681 NRSA02J-562	Chip R Chip R Chip R Chip R Chip R Chip R Chip R	820 1/10 W 820 1/10 W 560 1/10 W 680 1/10 W 5.6 K 1/10 W
C1 C2	NCT03CH-560 NCT03CH-560	C Cap C Cap	56 P 56 P	50 V 50 V	C1 C2 C3 C4 C5	NCT03CH-101 NCT03CH-101 NCT03CH-560 NCF21HZ-103 NCF21HZ-103	C Cap C Cap C Cap C Cap C Cap	100 P 50 N 100 P 50 N 56 P 50 N 0.01 50 N

.4 MT2 board assembly 118		1800000	7.5 IN1	board assembly	19		
Symbol No.	Part No.	Part Name	Description	Symbol No.	Part No.	Part Name	Description
R1	QRD161J-750	CR	75 1/6 W	R2	QRD161J-102	CR	1 K 1/6 W
R2	QRD161J-750	CR	75 1/6 W				
				J8	Refer Section 5.2.	l 1 (14)	INCOM JACK
C1	QEPA1CM-106	E Cap	10 16 V				
C2	NCT03CH-101	CR	100 P			-	
C3	QETC1CM-108	E Cap	1000 16 V				
CN34	SCV0500-001	Connector	30 Pin VP board 30 Pin GL board				
CN35	SCV0500-001	Connector Connector	30 Pin GL board				1
CN36 CN38	SCV1251-40S SCV1265-028	Connector	28 Pin				
CN39	SCV1227-003	Connector	3 Pin VR board				
CN40	SCV1227-004	Connector	4 Pin INT board				
CN41	SCV1228-002	Connector	2 Pin ER board				
CN42	SCV1228-002	Connector	2 Pin				
CN43	SCV1227-003	Connector	3 Pin CN 2 board				
CN44	SCV1265-020	Connector	20 Pin CT board				
CN45	SCV1227-005	Connector	5 Pin CN 4 board				
<u> </u>	Perfer to Section 2	1.1					
	SCV1271-001	Fuse Holder					
LC1	DST306-92B271M	Filter					
S1	SCV1080-003	Socket	PB AUDIO/AUDIO 2				
	SCV1392-001	Short Pin					
		ļ					
			1				
1	1		1	1 1	1	1	1

7.11 CP board assembly [1][1]

Symbol	Part No.	Part Name	Description	Symbol No.	Part No.	Part Name	Description
N 12 345 67890 12345 6780 6780 6780 6780 6780 6780 6780 6780	Part 100. MBS 97 1028 35 1 000 177 100 100 100 177 100 100 177 100 17	Part Coloco Colo	Description FUJITSU ROM(PAL) TOSHIBA TOSHIBA TOSHIBA TOSHIBA FUJISUBISHI FUJISUBISH F		Part No. ORBOBIK-223 ORBOBIK-223 NCF21EZ-104 NCF21EZ-103 NCF21EZ-103 NCF21HZ-103 NCF21HZ-103 NCF21HZ-103 NCF21HZ-103 NCF21HZ-103 NCF21HZ-103 NCF21HZ-103 NCF21EZ-104 NCF21EZ-105 SCV1311-001 SCV1335-002 SCV0501-001 SCV0501-001	Part Name R.NEIWORK C.CAP C.	Description 22K X8 22K X8 0.10 25V 0.10 25V 0.10 25V 0.10 25V 0.10 25V 150P 50V 0.10 25V 122P 50V 1.0 50V 4.7 50V 0.10 25V 1.0 25V 1

Symbol No.	Part No.	Part Name	Description	Symbol No.	Part No.	Part Name	Description
• CBM1 • CBM2	CBMC4226-00A CBMC4226-00A CBMC4226-00A	AW/AB DET 1 CM AW/AB DET 1 CBI AW/AB DET 1 CBI	м.	● CBM4	CBMC4303-00A	NAM DET CBM	
				101	LM2904M	10	NATIONAL SEMICONDUCTOR
Q1 02 03	25C2295(B.C) 25K198(Q.R)	IRANSISTOR	MATSUSHITA MATSUSHITA	Q.2	DTC124K	TRANSISTOR	ROHM
93 04 95 Q6	25C2295(B.C) 25K198(Q.R) 25K198(Q.R) 25K198(Q.R)	TRANSISTOR FET FET TRANSISTOR	MATSUSHITA MATSUSHITA HITACHI MATSUSHITA	D1 U2 D3	MA152A MA152A MA152A	DIODE	MATSUSHITA MATSUSHITA MATSUSHITA
P. G.	NRSA02J-102 NRSA02J-152 NRSA02J-331 NRSA02J-474 NRSA02J-104 NRSA02J-102	MGR HGR MGR MGR MGR MGR	1.0K 1/10W 1.5K 1/10W 330 1/10W 470K 1/10W 100K 1/10W 1.0K 1/10W	R1 R4 R5 R67 R8 R9 R10 R11	NRSAO2J-183 NRSAO2J-153 NRSAO2J-822 NRSAO2J-822 NRSAO2J-562 NRSAO2J-333 NRSAO2J-153 NRSAO2J-183 NRSAO2J-473	MGR MGR MGR MGR MGR MGR MGR	18K 1/10W 15K 1/10W 10K 1/10W 8.2K 1/10W 5.6K 1/10W 15K 1/10W 18K 1/10W 18K 1/10W
R8 R9 R10	NRSA02J-104 NRSA02J-154 HRSA02J-102	NGR MGR MGR	150K 1/10W 150K 1/10W 1.0K 1/10W	R17	NESACZJ-100 NESACZJ-223	MGR	10 1/10W 22K 1/10W
R11 R12	MRSAOZJ-474 NRSAOZJ-104	MGR MGR	100K 1/10W	R14 R15	NRS102J-222 NRS102J-154	MGR	2.2K 1/10W 150K 1/10W
C1 C2 C3 C4	NCT03CH-680 NCF21EZ-104 NCF21EZ-104 NCF21EZ-104	C CAP C CAP C CAP C CAP	68P 50V 0.10 25V 0.10 25V 0.10 25V	C1	NCF21EZ-104 SCV1210-006	C CAP	O.10 25V
• CBM5	SCV1210-006 CBMC4306-00A	PIN CONNECTOR AW/AB DET 2 CB	CLIP LEAD				
1 C 1 1 C 2	LM2904M LM2904M	i č	NATIONAL SEMICONOUCTOR NATIONAL SEMICONDUCTOR				
Q1 Q2 Q3	25K198(Q.R) 25K198(Q.R) 25K198(Q.R)	FET FET FET	MATSUSHITA MATSUSHITA MATSUSHITA				
R1 R2 R3 R4 R5	NRSA02J-103 NRSA02J-103 NRSA02J-103 NRSA02J-103 NRSA02J-103	MGR MGR MGR MGR MGR	10K 1/10W 10X 1/10W 10K 1/10W 10K 1/10W 10K 1/10W				
R6 R7 R8 R9 R10	NRSA02J-103 NRSA02J-474 NRSA02J-104 NRSA02J-333 NRSA02J-472	MGR MGR MGR MGR MGR	10K 1/10W 470K 1/10W 100K 1/10W 33K 1/10W 4.7K 1/10W				
R11 R12 R13 R14 R15	NRSAO2J-474 NRSAO2J-104 NRSAO2J-333 NRSAO2J-103 NRSAO2J-474	MGR MGR MGR MGR MGR	470K 1/10W 100K 1/10W 33K 1/10W 10K 1/10W 470K 1/10W				
R16 R17 R18 R19 R20	NRSA02J-104 NRSA02J-333 NRSA02J-472 NRSA02J-333 NRSA02J-123	MGR MGR MGR MGR MGR	100K 1/10W 33K 1/10W 4.7K 1/10W 33K 1/10W 12K 1/10W				
C1	NCF21EZ-104	C CAP	0.10 25V				
	SCV1210-012	PIN CONNECTOR	CLIP LEAD				

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JVC Service Manual

Supplement

3-CCD COLOR VIDEO CAMERA
3-CCD-FARBVIDEO KAMERA
CAMERA VIDEO COULEUR A TROIS CCD



VICTOR COMPANY OF JAPAN, LIMITED

Manual Change Information For Service Manual No. 60017 Model KY-17 and KY-R17

This edition, a supplement to the headlined service manual, refers only to the component which has been altered in production of this series.

(Alteration of this time: "CP board" which has been redesigned with the change of the CPU's device IC.)

Hence, your manual requires updating with new changes and information auch as in the following pages.

This change affects KY-17U serial No. 17450381 and after (NTSC Version) This change affects KY-17E serial No. 17450537 and after (PAL Version)